SEQUENCE LISTING

<110>   Rouleau, Guy A.
        Lafreniere, Ronald G.
        Rochefort, Daniel

<120>   LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS THEREOF AND METHOD
USING SAME TO ASSESS, DIAGNOSE, PROGNOSE OR TREAT EPILEPSY

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<140>   09/718,355
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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu
            20                  25                  30

Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly
        35                  40                  45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
    50                  55                  60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65                  70                  75                  80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
                85                  90                  95
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```
Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
            100                 105                 110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
            115                 120                 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
    130                 135                 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145                 150                 155                 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg
                165                 170                 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
            180                 185                 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp
            195                 200                 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
    210                 215                 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225                 230                 235                 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
                245                 250                 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
            260                 265                 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu
    275                 280                 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
    290                 295                 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp
305                 310                 315                 320
```

```
Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
            325                 330                 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
            340                 345                 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
            355                 360                 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
    370             375                 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
385             390                 395                 400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
            405                 410                 415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
            420                 425                 430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
    435                 440                 445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
    450                 455                 460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
465                 470                 475                 480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
            485                 490                 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
            500                 505                 510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
    515                 520                 525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
    530                 535                 540
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Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
545   550   555   560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
                565   570   575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
            580   585   590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
        595   600   605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
    610   615   620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625   630   635   640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
            645   650   655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
            660   665   670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
        675   680   685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
    690   695   700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
705   710   715   720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
                725   730   735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
            740   745   750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
        755   760   765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785   790   795   800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
                    805   810   815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
                820   825   830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
                835   840   845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
        850   855   860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
865   870   875   880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
                885   890   895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
                900   905   910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
        915   920   925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
        930   935   940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
945   950   955   960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
                965   970   975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
                980   985   990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
        995   1000   1005

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Met Asn  Asn Leu Gln Ile Ala  Val Asp Arg Met His  Lys Gly Val
    1010                 1015                 1020

Ala Tyr  Val Lys Arg Lys Ile  Tyr Glu Phe Ile Gln  Gln Ser Phe
    1025                 1030                 1035

Ile Arg  Lys Gln Lys Ile Leu  Asp Glu Ile Lys Pro  Leu Asp Asp
    1040                 1045                 1050

Leu Asn  Asn Lys Lys Asp Ser  Cys Met Ser Asn His  Thr Ala Glu
    1055                 1060                 1065

Ile Gly  Lys Asp Leu Asp Tyr  Leu Lys Asp Val Asn  Gly Thr Thr
    1070                 1075                 1080

Ser Gly  Ile Gly Thr Gly Ser  Ser Val Glu Lys Tyr  Ile Ile Asp
    1085                 1090                 1095

Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn Pro Ser  Leu Thr Val
    1100                 1105                 1110

Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp Phe Glu  Asn Leu Asn
    1115                 1120                 1125

Thr Glu  Asp Phe Ser Ser Glu  Ser Asp Leu Glu Glu  Ser Lys Glu
    1130                 1135                 1140

Lys Leu  Asn Glu Ser Ser Ser  Ser Ser Glu Gly Ser  Thr Val Asp
    1145                 1150                 1155

Ile Gly  Ala Pro Val Glu Glu  Gln Pro Val Val Glu  Pro Glu Glu
    1160                 1165                 1170

Thr Leu  Glu Pro Glu Ala Cys  Phe Thr Glu Gly Cys  Val Gln Arg
    1175                 1180                 1185

Phe Lys  Cys Cys Gln Ile Asn  Val Glu Glu Gly Arg  Gly Lys Gln
    1190                 1195                 1200

Trp Trp  Asn Leu Arg Arg Thr  Cys Phe Arg Ile Val  Glu His Asn
    1205                 1210                 1215
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Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly
    1220   1225   1230

Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile
    1235   1240   1245

Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe
    1250   1255   1260

Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr
    1265   1270   1275

Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
    1280   1285   1290

Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu
    1295   1300   1305

Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro
    1310   1315   1320

Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn
    1325   1330   1335

Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val
    1340   1345   1350

Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu
    1355   1360   1365

Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp
    1370   1375   1380

Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys
    1385   1390   1395

Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val
    1400   1405   1410

Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val
    1415   1420   1425

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Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met Tyr Ala  Ala Val Asp
    1430             1435             1440

Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr Glu Glu  Ser Leu Tyr
    1445             1450             1455

Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile Phe Gly  Ser Phe Phe
    1460             1465             1470

Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile Asp Asn  Phe Asn Gln
    1475             1480             1485

Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile Phe Met  Thr Glu Glu
    1490             1495             1500

Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys Leu Gly  Ser Lys Lys
    1505             1510             1515

Pro Gln  Lys Pro Ile Pro Arg  Pro Gly Asn Lys Phe  Gln Gly Met
    1520             1525             1530

Val Phe  Asp Phe Val Thr Arg  Gln Val Phe Asp Ile  Ser Ile Met
    1535             1540             1545

Ile Leu  Ile Cys Leu Asn Met  Val Thr Met Met Val  Glu Thr Asp
    1550             1555             1560

Asp Gln  Ser Glu Tyr Val Thr  Thr Ile Leu Ser Arg  Ile Asn Leu
    1565             1570             1575

Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys Val Leu  Lys Leu Ile
    1580             1585             1590

Ser Leu  Arg His Tyr Tyr Phe  Thr Ile Gly Trp Asn  Ile Phe Asp
    1595             1600             1605

Phe Val  Val Val Ile Leu Ser  Ile Val Gly Met Phe  Leu Ala Glu
    1610             1615             1620

Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr Leu Phe  Arg Val Ile
    1625             1630             1635

Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg Leu Ile  Lys Gly Ala
```

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            1640                    1645                       1650


Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu Met Met  Ser Leu Pro
    1655                 1660                 1665


Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe Leu Val  Met Phe Ile
    1670                 1675                 1680


Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala Tyr Val  Lys Arg Glu
    1685                 1690                 1695


Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu Thr Phe  Gly Asn Ser
    1700                 1705                 1710


Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser Ala Gly  Trp Asp Gly
    1715                 1720                 1725


Leu Leu  Ala Pro Ile Leu Asn  Ser Lys Pro Pro Asp  Cys Asp Pro
    1730                 1735                 1740


Asn Lys  Val Asn Pro Gly Ser  Ser Val Lys Gly Asp  Cys Gly Asn
    1745                 1750                 1755


Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser Tyr Ile  Ile Ile Ser
    1760                 1765                 1770


Phe Leu  Val Val Val Asn Met  Tyr Ile Ala Val Ile  Leu Glu Asn
    1775                 1780                 1785


Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu Pro Leu  Ser Glu Asp
    1790                 1795                 1800


Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu Lys Phe  Asp Pro Asp
    1805                 1810                 1815


Ala Thr  Gln Phe Met Glu Phe  Glu Lys Leu Ser Gln  Phe Ala Ala
    1820                 1825                 1830


Ala Leu  Glu Pro Pro Leu Asn  Leu Pro Gln Pro Asn  Lys Leu Gln
    1835                 1840                 1845


Leu Ile  Ala Met Asp Leu Pro  Met Val Ser Gly Asp  Arg Ile His
    1850                 1855                 1860
```

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu
    1865   1870   1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe
    1880   1885   1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr
    1895   1900   1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln
    1910   1915   1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala
    1925   1930   1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu
    1940   1945   1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser
    1955   1960   1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro
    1970   1975   1980

Pro Ser Tyr Asp Arg Val Thr Lys Pro Ile Val Glu Lys His Glu
    1985   1990   1995

Gln Glu Gly Lys Asp Glu Lys Ala Lys Gly Lys
    2000   2005

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Met Glu Gln Thr Val Leu Val Pro Pro Gly Pro Asp Ser Phe Asn Phe
1   5   10   15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Arg Arg Ile Ala Glu Glu
            20   25   30

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Lys Ala Lys Asn Pro Lys Pro Asp Lys Lys Asp Asp Asp Glu Asn Gly
    35              40              45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
    50              55              60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65              70              75              80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
            85              90              95

Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
            100             105             110

Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
        115             120             125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
        130             135             140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145             150             155             160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg
            165             170             175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
        180             185             190

Leu Asp Phe Thr Val Ile Thr Phe Ala Phe Val Thr Glu Phe Val Asn
        195             200             205

Leu Gly Asn Phe Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
    210             215             220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225             230             235             240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
            245             250             255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
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Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu
        275   280   285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
        290   295   300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp
305   310   315   320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
                325   330   335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
                340   345   350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
        355   360   365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
        370   375   380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
385   390   395   400

Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
                405   410   415

Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala
                420   425   430

Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
        435   440   445

Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
        450   455   460

Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
465   470   475   480

Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
                485   490   495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
        500   505   510

Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
        515   520   525

Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
    530   535   540

Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
545   550   555   560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
            565   570   575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
        580   585   590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
        595   600   605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
    610   615   620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625   630   635   640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
            645   650   655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
        660   665   670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
    675   680   685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
    690   695   700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
705   710   715   720

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Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
            725             730             735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
            740             745             750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
        755             760             765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
    770             775             780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785             790             795             800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
            805             810             815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
            820             825             830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
        835             840             845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
    850             855             860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
865             870             875             880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
            885             890             895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
            900             905             910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
        915             920             925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
    930             935             940
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Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
945   950   955   960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
                965   970   975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
                980   985   990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
          995   1000   1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val
     1010   1015   1020

Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe
     1025   1030   1035

Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp
     1040   1045   1050

Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Ala Glu
     1055   1060   1065

Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr
     1070   1075   1080

Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp
     1085   1090   1095

Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val
     1100   1105   1110

Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn
     1115   1120   1125

Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu
     1130   1135   1140

Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp
     1145   1150   1155

Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu

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        1160                    1165                    1170


Thr Leu Glu Pro Glu Ala Cys  Phe Thr Glu Gly Cys  Val Gln Arg
    1175                1180                1185


Phe Lys Cys Cys Gln Ile Asn  Val Glu Glu Gly Arg  Gly Lys Gln
    1190                1195                1200


Trp Trp Asn Leu Arg Arg Thr  Cys Phe Arg Ile Val  Glu His Asn
    1205                1210                1215


Trp Phe Glu Thr Phe Ile Val  Phe Met Ile Leu Leu  Ser Ser Gly
    1220                1225                1230


Ala Leu Ala Phe Glu Asp Ile  Tyr Ile Asp Gln Arg  Lys Thr Ile
    1235                1240                1245


Lys Thr Met Leu Glu Tyr Ala  Asp Lys Val Phe Thr  Tyr Ile Phe
    1250                1255                1260


Ile Leu Glu Met Leu Leu Lys  Trp Val Ala Tyr Gly  Tyr Gln Thr
    1265                1270                1275


Tyr Phe Thr Asn Ala Trp Cys  Trp Leu Asp Phe Leu  Ile Val Asp
    1280                1285                1290


Val Ser Leu Val Ser Leu Thr  Ala Asn Ala Leu Gly  Tyr Ser Glu
    1295                1300                1305


Leu Gly Ala Ile Lys Ser Leu  Arg Thr Leu Arg Ala  Leu Arg Pro
    1310                1315                1320


Leu Arg Ala Leu Ser Arg Phe  Glu Gly Met Arg Val  Val Val Asn
    1325                1330                1335


Ala Leu Leu Gly Ala Ile Pro  Ser Ile Met Asn Val  Leu Leu Val
    1340                1345                1350


Cys Leu Ile Phe Trp Leu Ile  Phe Ser Ile Met Gly  Val Asn Leu
    1355                1360                1365


Phe Ala Gly Lys Phe Tyr His  Cys Ile Asn Thr Thr  Thr Gly Asp
    1370                1375                1380
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Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys
    1385   1390   1395

Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val
    1400   1405   1410

Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val
    1415   1420   1425

Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp
    1430   1435   1440

Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser Leu Tyr
    1445   1450   1455

Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe
    1460   1465   1470

Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
    1475   1480   1485

Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu
    1490   1495   1500

Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys
    1505   1510   1515

Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met
    1520   1525   1530

Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met
    1535   1540   1545

Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp
    1550   1555   1560

Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu
    1565   1570   1575

Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile
    1580   1585   1590

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Ser Leu Arg His Tyr Tyr Phe  Thr Ile Gly Trp Asn  Ile Phe Asp
    1595                1600           1605

Phe Val Val Val Ile Leu Ser  Ile Val Gly Met Phe  Leu Ala Glu
    1610                1615           1620

Leu Ile Glu Lys Tyr Phe Val  Ser Pro Thr Leu Phe  Arg Val Ile
    1625                1630           1635

Arg Leu Ala Arg Ile Gly Arg  Ile Leu Arg Leu Ile  Lys Gly Ala
    1640                1645           1650

Lys Gly Ile Arg Thr Leu Leu  Phe Ala Leu Met Met  Ser Leu Pro
    1655                1660           1665

Ala Leu Phe Asn Ile Gly Leu  Leu Leu Phe Leu Val  Met Phe Ile
    1670                1675           1680

Tyr Ala Ile Phe Gly Met Ser  Asn Phe Ala Tyr Val  Lys Arg Glu
    1685                1690           1695

Val Gly Ile Asp Asp Met Phe  Asn Phe Glu Thr Phe  Gly Asn Ser
    1700                1705           1710

Met Ile Cys Leu Phe Gln Ile  Thr Thr Ser Ala Gly  Trp Asp Gly
    1715                1720           1725

Leu Leu Ala Pro Ile Leu Asn  Ser Lys Pro Pro Asp  Cys Asp Pro
    1730                1735           1740

Asn Lys Val Asn Pro Gly Ser  Ser Val Lys Gly Asp  Cys Gly Asn
    1745                1750           1755

Pro Ser Val Gly Ile Phe Phe  Phe Val Ser Tyr Ile  Ile Ile Ser
    1760                1765           1770

Phe Leu Val Val Val Asn Met  Tyr Ile Ala Val Ile  Leu Glu Asn
    1775                1780           1785

Phe Ser Val Ala Thr Glu Glu  Ser Ala Glu Pro Leu  Ser Glu Asp
    1790                1795           1800
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Asp Phe  Glu Met Phe Tyr Glu   Val Trp Glu Lys Phe   Asp Pro Asp
    1805             1810            1815


Ala Thr  Gln Phe Met Glu Phe   Glu Lys Leu Ser Gln   Phe Ala Ala
    1820             1825            1830


Ala Leu  Glu Pro Pro Leu Asn   Leu Pro Gln Pro Asn   Lys Leu Gln
    1835             1840            1845


Leu Ile  Ala Met Asp Leu Pro   Met Val Ser Gly Asp   Arg Ile His
    1850             1855            1860


Cys Leu  Asp Ile Leu Phe Ala   Phe Thr Lys Arg Val   Leu Gly Glu
    1865             1870            1875


Ser Gly  Glu Met Asp Ala Leu   Arg Ile Gln Met Glu   Glu Arg Phe
    1880             1885            1890


Met Ala  Ser Asn Pro Ser Lys   Val Ser Tyr Gln Pro   Ile Thr Thr
    1895             1900            1905


Thr Leu  Lys Arg Lys Gln Glu   Glu Val Ser Ala Val   Ile Ile Gln
    1910             1915            1920


Arg Ala  Tyr Arg Arg His Leu   Leu Lys Arg Thr Val   Lys Gln Ala
    1925             1930            1935


Ser Phe  Thr Tyr Asn Lys Asn   Lys Ile Lys Gly Gly   Ala Asn Leu
    1940             1945            1950


Leu Ile  Lys Glu Asp Met Ile   Ile Asp Arg Ile Asn   Glu Asn Ser
    1955             1960            1965


Ile Thr  Glu Lys Thr Asp Leu   Thr Met Ser Thr Ala   Ala Cys Pro
    1970             1975            1980


Pro Ser  Tyr Asp Arg Val Thr   Lys Pro Ile Val Glu   Lys His Glu
    1985             1990            1995


Gln Glu  Gly Lys Asp Glu Lys   Ala Lys Gly Lys
    2000             2005
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<212> DNA
<213> Homo sapiens

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gcaaggagaa gcaatactgg gagattacag agaagaaagg aaaaaaggct gagagaaaag   180

aggttgagga agaaatcata aatctggatt gtgagaaagt gtttaatatt tagccactag   240

atggcgatgt aatgtaaggt gctgtcttga cttttttttt ttttttttga aacaagctat   300

ttgctgattt gtattaggta ccatagagtg aggcgaggat gaagccgaga agatactgca   360

gaggtctctg gtgcatgtgt gtatgtgtgc gtttgtgtgt gtttgtgtgt ctgtgtgttc   420

tgccccagtg agactgcagc ccttgtaaat actttgacac cttttgcaag aaggaatctg   480

aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttcctcac   540

tgcagatgga taattttcct tttaatcagg taagccatct aattgtttca tcttgatttt   600

aagtttattc attccagtta ttcctttgga aaaagagtcc atggaaattc agtttgggca   660

gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct   720

cctcttcttg tccctcccc cgcgccctcc tctctcaacc ttccatgaac tgaaatcagg   780

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catctggcca   850

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<211> 483
<212> DNA
<213> Homo sapiens

<400> 6

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caggacctga cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca   180

ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg   240

cccaaagcaa atagtgactt ggaagctgga aagaaccttc catttattta tggagacatt   300

cctccagaga tggtgtcaga gccctggag gacctggacc cctactatat caataagaaa   360

gtgagtgttt tttttatcag gcatattttt gctgctaatt gcctactgca ttccttggac   420

tgttgtagca ccaacacatg ccaatagcac aaatctagta tctctgttag aatgaacaca   480

ttt   483

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<212> DNA
<213> Homo sapiens

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agtttaagtg gtttatactt tcatacttct atgttgtgtt cctgtcttac agactttat   180

agtattgaat aaagggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt   240

aactcccttc aatcctctta ggaaaatagc tattaagatt ttggtacatt catatccttt   300

ttcaagtgat taatattaac tatttgtaca tgatctgtaa gcactttata gctaaatatc   360

aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcatctttg   420

tcatattagc ctcattctta aagttcatta atcacataga cattactgaa acatgtactc   480

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<211> 501
<212> DNA
<213> Homo sapiens

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tatccctgaa ttttggctaa gctgcagttt gggcttttca atgttagctt tttgtaatat   180

aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca   240

tgctaattat gtgcactatt ttgacaaact gtgtgtttat gacaatgagt aaccctcctg   300

attggacaaa gaatgtagag taagttcaac ttatattttt aataacatat atacattygg   360

gattytgaaa ctgtgtctta atgtagtctt aaaataaaac tgaagagcat tttattaaag   420

tcattcctag acaaaattac gcagcaagag gacaatgctc attggccctc aggcctgctg   480

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<211> 563
<212> DNA

<213> Homo sapiens

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gaaattggta tgctatgaaa aaacactgtt actttatcaa attttttgga tgcttgtttt   240

cagatacacc ttcacaggaa tatatacttt tgaatcactt ataaaaatta ttgcaagggg   300

attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttcactgt   360

cattacattt gcgtaagtgc ctttbytgaa actttaagag agaacatagt ttggttttcc   420

atcagtgctt atgctttttaa gaataggttt gctttacctg tagaatattt ttgtgtgatt   480

tatacattca aactctggat ttcaatttag cacaacaaag gtctaagtgg aatttcacta   540

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<210> 10
<211> 253
<212> DNA
<213> Homo sapiens

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ctacaggttt gtaacagaat ttgtaaacct aggcaatttt tcagctcttc gcactttcag   120

agtcttgaga gctttgaaaa ctatttcggt aattccaggt aagaagtgat tagagtaaag   180

gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa   240

ctcccgctta cag   253

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<211> 340
<212> DNA
<213> Homo sapiens

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ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc   180

attccaggtg agagcaaggt tagataatga gacggaccca tcatgtgatt cagcatcctt   240

ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggt gttcaaagaa   300

atgattatta tgttagacat agcttatcag cctggagtta   340

<210> 12
<211> 409
<212> DNA
<213> Homo sapiens

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tgagcgtatt tgctctaatt gggctgcagc tgttcatggg caacctgagg aataaatgta   180

tacaatggcc tcccaccaat gcttccttgg aggaacatag tatagaaaag aatataactg   240

tgaattataa tggtacactt ataaatgaaa ctgtctttga gtttgactgg aagtcatata   300

ttcaagattc aagtaagaat tattgttatg tacatttcct taaaaagtag aattggattg   360

tttgtaacac aaaggataaa tacttgaggg gctggatatc ccattttac   409

<210> 13
<211> 266
<212> DNA
<213> Homo sapiens

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cgactttctt ttttcaaaca ggatatcatt atttcctgga gggttttta gatgcactac   180

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tgtacacaat acatatgtgt atcttt   266

<210> 14
<211> 604
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<213> Homo sapiens

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gaaatagatt agttacttat ttgtcaaact tttattttga ataccaaat ctttctgact   180

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ttttacccca cttgcagcca atgtccagag ggatatatgt gtgtgacagc tggtagaaat   300

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cccaattatg gctacacaag ctttgatacc ttcagttggg ctttttttgtc cttgtttcga      360

ctaatgactc aggacttctg ggaaaatctt tatcaactgg tgagaactaa agagccacac      420

tctccattta agtaaaagta tacaagaaaa ccaattgagt tatgaaatta aaaccggatg      480

ataatatagt agaaagagca gaacttgaca cgagacttga gttcctctat cctattgatt      540

ataacacata ctgagcagag tgatgccaag gattgcaatt ctctcccatt tcttcttggc      600

tcaa                                                                    604


<210>  15
<211>  378
<212>  DNA
<213>  Homo sapiens

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acatgatatt ttttgtattg gtcattttct tgggctcatt ctacctaata aatttgatcc      180

tggctgtggt ggccatggcc tacgaggaac agaatcaggc caccttggaa gaagcagaac      240

agaaagaggc cgaatttcag cagatgattg aacagcttaa aaagcaacag gaggcagctc      300

aggtaagctg ccctgctcat ggcactgacc tttatcgtct gatgtactat atgagagaag      360

tagtctagag cgtgtgat                                                     378


<210>  16
<211>  845
<212>  DNA
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cataataaat gttaccatgg agcaaactaa attatctcca aaagccttca ttaggtagaa      180

agaaaaaaaa aatctcctct tatacttgca gagaatcttc tctgtgagat gatcttcagt      240

cagttcaata tatttttaa aagccatgca aatacttcag cccttcaaa gaaagataca       300

gtctcttcag gtgctatgtt aaaatcattt ctcttcaata tagcaggcag caacggcaac      360

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agcctctaag ttgagttcca agagtgctaa ggaaagaaga aatcggagga agaaaagaaa      480

acagaaagag cagtctggtg gggaagagaa agatgaggat gaattccaaa aatctgaatc      540
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tgaaaagagg tactcctccc cacaccaggt atggcactgc tgagtttact gatgcatggt   660

tgaaaattaa aacatgggag agaggggag atttagaaaa tggactcagg aattttatc   720

aactgaatca accactgttg tgttatattt aaacccatcc cttcttcaca tagttatgca   780

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tgaca   845

<210> 17
<211> 965
<212> DNA
<213> Homo sapiens

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taatcccaag ggctagaaac tttctttat caaggtaatt taatttaatg tgaatgcaca   180

taaaatgaga atgataatca aaaggaatga accatattct gttatgaatg ctgaaatctc   240

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tgcaatggtg tgggttcctt ggttggtgga ccttcagttc ctacatcgcc tgttggacag   660

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tgatagacta accaactaaa acttaaaacc ttagcagtcg cctgcacaaa cctgaatgca   900

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<210> 18
<211> 641

<212> DNA
<213> Homo sapiens

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atgatacaat aagtcagaaa tatctgccat caccaattga atatgaaagt gcatgatgca   180

tgtgtttcat gaaattcact gtgtcaccat ttggttgttt gcttgtcata ttgctcaaat   240

taattgttta atgcattagc attttttttt acagggaaca accactgaaa ctgaaatgag   300

aaagagaagg tcaagttctt tccacgtttc catggacttt ctagaagatc cttcccaaag   360

gcaacgagca atgagtatag ccagcattct aacaaataca gtagaaggtt ggtaacaaat   420

tctattttcg tttcaattat tttcaccaaa cttatattgt ctcatttcaa acaaatatat   480

ttgtgagttg ggaatagtgc attctaatga aaagacagtc taattcaaga gctgttattt   540

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ggactaagac tgttttccta actgtgtagc aactctttga a   641

<210> 19
<211> 818
<212> DNA
<213> Homo sapiens

<400> 19
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ataaccttgg gaggtttaga gtaaactgta attttttta caagtacaaa aaagggtgtc   180

tctgtaacaa aaatgtgttg attactgaaa ataagtttag tggatatgaa ataaatgtgt   240

gtgtataaag tawacctttt ggtgggtctt tttttttttt ttcttaatct agaacttgaa   300

gaatccaggc agaaatgccc accctgttgg tataaatttt ccaacatatt cttaatctgg   360

gactgttctc catattggtt aaaagtgaaa catgttgtca acctggttgt gatggaccca   420

tttgttgacc tggccatcac catctgtatt gtcttaaata ctcttttcat ggccatggag   480

cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata   540

ttggaaggta aatgtgttta gtcttcaaat tttctgcttg aaaaactgtt tacatttaat   600

tgtgtatagc agtctttcaa ccatccttca tgcttcctgg cccctgcaaa atcgcaatta   660

tatttagctg gctatactct actttttgc caaaaataat caccttaat gtgctcacaa   720

aaactgagaa aggcataggc ctacagcact acttgaaaag tcaacagcaa tatttataat   780

ttttcaggat ccagaagtag ctcatagatt aagaacat   818

<210> 20
<211> 645
<212> DNA
<213> Homo sapiens

<400> 20
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ttatctactt cgcgtttcca caaggataaa attaaataat gtatatgawa gtctttcatc   120

aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata   180

agcattatgt tctaagagca aatcttatgt catgtatgtt attatctggt ggaattagat   240

taattttgtt ttgatcttag gttttcactg ggatctttac agcagaaatg tttctgaaaa   300

ttattgccat ggatccttac tattatttcc aagaaggctg gaatatcttt gacggtttta   360

ttgtgacgct tagcctggta gaacttggac tcgccaatgt ggaagggtta tctgttctcc   420

gttcatttcg attggtaaaa aaaaaaaaa aaggaaccaa attcaaaaac ctttctaaca   480

ttcagggttc ttgcatagca ttgtcatagt ttttttgcca cacaaccatt aggcattgta   540

agtttttctg taacatttgc attgtcaaaa acttttccta catgggaata attctcaatt   600

attaggttac cttagttcaa gggcwaggtc ggaaaggtaa cggtt   645

<210> 21
<211> 829
<212> DNA
<213> Homo sapiens

<400> 21
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aaatatatat taatctttca ttttccagct gcgagatttc aagttggcaa atcttggcc   120

aacgttaaat atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac   180

cctcgtcttg gccatcatcg tcttcatttt tgccgtggtc ggcatgcagc tctttggtaa   240

aagctacaaa gattgtgtct gcaagatcgc cagtgattgt caactcccac gctggcacat   300

gaatgacttc ttccactcck hcctgattgt gttccgcgtg ctgtgtgggg agtggataga   360

gaccatgtgg gactgtatgg aggttgctgg tcaagccatg tgccttactg tcttcatgat   420

ggtcatggtg attggaaacc tagcggtatg tacccactta agatatgcat tttggaaata   480

caccagcatg gcacatgtat acatatgtaa ctaacctgca cattgtgcac atgtacccta   540

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aaacttaaag tataataaaa aaaaagagta taatttaatg gtgactgttt tgtcaaaaag      600

aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcactttaa      660

caacacagca atatabcagt gcccctgcat tttttatacc aaattctatt ttgtcagtca      720

ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg      780

atgtgctggg accattttat aaattcagag ccaaggaaga gagaagtct                  829
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<210> 22
<211> 909
<212> DNA
<213> Homo sapiens

<400> 22
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acaaaacctt agattagctc attcaatttc actttacgaa tgggagaact tgagagcaac      120

agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca      180

tcttctaatc actatgctgt ggtgtttcct tctcatcaag ttttagaact tagagttttt      240

tccacactta aagaaagaa taagtgattg taatctgctc ttccctacat tggtgtaaaa       300

ttataatcat gttttgttg tttttaaggt cctgaatctc tttctggcct tgcttctgag       360

ctcatttagt gcagacaacc ttgcagccac tgatgatgat aatgaaatga ataatctcca      420

aattgctgtg dataggatgc acaaaggagt agcttatgtg aaaagaaaaa tatatgartt      480

tattcaacag tccttcatta ggaaacaaaa gattttagat gaaattaaac cacttgatga      540

tctaaacaac aagaaagaca gttgtatgtc caatcataca gcagaaattg ggaaagatct      600

tgactatctt aaagatgtaa atggaactac aagtggtata ggaactggca gcagtgttga      660

aaaatacatt attgatgaaa gtgattacat gtcattcata aacaacccca gtcttactgt      720

gactgtacca attgctgtag gagaatctga ctttgaaaat ttaaacacgg aagactttag      780

tagtgaatcg gatctggaag aaagcaaaga ggtaagattc tataggtgtg ggtaggtatg      840

aatacatata catatataca tatacacaca tacagatgay cctcagctta atgatgtttt      900

tacttaaga                                                               909
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<210> 23
<211> 516
<212> DNA
<213> Homo sapiens

<220>

<221> misc_feature
<222> (393)..(393)
<223> n = a, c, t or g

<220>
<221> misc_feature
<222> (415)..(451)
<223> N = a, c, t or g

<220>
<221> misc_feature
<222> (454)..(454)
<223> N = a, c, t or g

<220>
<221> misc_feature
<222> (513)..(513)
<223> n = a, c, t or g

<400> 23
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ccccttattc aatctctctt tttctctaaa aatatctcta cctcaagaag aataaaaaac   120

aaattcatag taataatcct tcttggcagg caacttatta ccaaaattaa ggactttact   180

ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggtagca   240

ctgtggacat cggcgcacct gtagaagaac agcccgtagt ggaacctgaa gaaactcttg   300

aacccgaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg   360

gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact   420

ttgtaataga tataattcaa tcacctctaa tatnttgaca gacaaaaaaa cttaaagtct   480

agtgtcatgc tttgattata tctgcccaat atntgg   516

<210> 24
<211> 640
<212> DNA
<213> Homo sapiens

<400> 24
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actctaggct tagagagcta tgctagcaag acagagatga gcatagtaat aaaaagacaa   120

gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca   180

acactttctg caggctgtgt acaaagattc aagtgttgtc aaatcaatgt ggaagaaggc   240

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agaggaaaac aatggtggaa cctgagaagg acgtgtttcc gaatagttga acataactgg     300

tttgagacct tcattgtttt catgattctc cttagtagtg gtgctctggt gagtgagatt     360

aagaaaaggt gatacagcac taatttttag aacactctaa tactgatgac ttattaatcc     420

tttgtttcat tgtcttagta tccaatgcat ttttaattat cccaccttgt atcttctata     480

gatttactct ataactctat atttctggat taacttttac tatgtatgta aatataattt     540

taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca     600

gcttattcat taacaccaaa ggatgtgaat attcaattac                           640


<210>  25
<211>  607
<212>  DNA
<213>  Homo sapiens

<400>  25
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tcatactttt cttttttcttc caccaatagt ctttcccctg attaaataag taaaagacct     120

ttgcgaggaa aaaaaaaaag taacagtaac tactgtttct ctgccctcct attccaatga     180

aatgtcatat gcatatgatt aattttttaa atagcttatg gagtataatt attttttgaaa     240

gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa     300

agacgattaa gacgatgttg gaatatgctg acaaggtttt cacttacatt ttcattctgg     360

aaatgcttct aaaatgggtg gcatatggct atcaaacata tttcaccaat gcctggagtt     420

ggctggactt cttaattgtt gatgtaggta tcgttcatat ttttgtctct gttcaaggta     480

gcttgtctta tttatattca aattctacaa tagtgagtct cagaccacta tgttatgttg     540

acagactata atarccacta aacgcatata tgcaatgaga gtgtcatttc tggaagacaa     600

gggctaa                                                               607


<210>  26
<211>  336
<212>  DNA
<213>  Homo sapiens

<400>  26
aaaaattata cttgtcgtat tatatagcaa ctacacattg aatgatgatt ctgtttatta      60

attgttatta ttcytgtgtg tgcaggtttc attggtcagt ttaacagcaa atgccttggg     120

ttactcagaa cttggagcct atcaatctct caggacacta agagctctga gacctctaag     180

agccttatct cgatttgaag ggatgagggt aagaaaaatg aaagaacctg aagtattgta     240
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tatagccaaa attaaactaa attaaattta gaaaaaagga aaaatgtatg catgcaaaag   300

gaatggcaaa ttcttgcaaa atgctcttta ttgttt   336

<210> 27
<211> 677
<212> DNA
<213> Homo sapiens

<400> 27
cttggttata ttgcctatag ttgttttcct aagtgtattg cttaagaaaa aaaaatgaat   60

tttaagattt ttttgaacct tgcttttaca tatcctagaa taaatagcat tgatagaaaa   120

aaagaatgga aagaccagag attactaggg gaattttttt tctttattaa cagataagaa   180

ttctgacttt tctttttttc catttgtgta ttaggtggtt gtgaatgccc ttttaggagc   240

aattccatcc atcatgaatg tgcttctggt ttgtcttata ttctggctaa ttttcagcat   300

catgggcgta aatttgtttg ctggcaaatt ctaccactgt attaacacca caactggtga   360

caggtttgac atcgaagacg tgaataatca tactgattgc ctaaaactaa tagaaagaaa   420

tgagactgct cgatggaaaa atgtgaaagt aaactttgat aatgtaggat ttgggtatct   480

ctctttgctt caagttgtaa gtgaacacta ttttctctga atattttat tgtttggaat   540

aataacaaaa taatgacata catctattat ttagttccta agaaaaagta tatatttctt   600

tctatttaaa aaatttcaat ttgttagtac aagtttatga gcccagatgg gtgaaaactt   660

tattacatgt aaggact   677

<210> 28
<211> 457
<212> DNA
<213> Homo sapiens

<400> 28
aatggccatt ttgttcaata tgtgttctag aaatgaaaag ccatactaaa atactgtctt   60

ggtccaaaat ctgtgtaaaa tttgttttga aatgtctttc aaaaatattc ccttttgaaa   120

attatatcag taagaatatt tattaaacat caggtctaaa ttatttttac tccaaagtaa   180

aacatgcatg tccttcttaa taggccacat tcaaaggatg gatggatata atgtatgcag   240

cagttgattc cagaaatgta agtattcctt gtattctaag tcttttttaca atattgatca   300

ggtggtaaaa ttaatcgaat aaagcataaa cgaccaaatg aaatgattct atcttgattt   360

aaaatatttg ggaaaaagtg tgacaggtaa atattcaagc atagcaatgt ttatcagaaa   420

gatcttacta agataattca acacatgaat tattttg   457

<210> 29
<211> 379
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (43)..(43)
<223> n = a, c, t or g

<400> 29
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gcaccagtga cgatttccag cactaaaatg tatggtaata ttttacaaaa tattcccctt   120

tggtaggtgg aactccagcc taagtatgaa gaaagtctgt acatgtatct ttactttgtt   180

attttcatca tctttgggtc cttcttcacc ttgaacctgt ttattggtgt catcatagat   240

aatttcaacc agcagaaaaa gaagataagt atttctaata ttttctctcc cactgagata   300

gaaaaattat tccttggagt gttttctctg ccaaatgagt acttgaattt agaacaaatg   360

ggagtatata ttataactg   379

<210> 30
<211> 393
<212> DNA
<213> Homo sapiens

<400> 30
gtcattttga attatttagg gaattaaaat attatcatac ctaaagagta caattttttt   60

tacattttaa atcccagata taattatact aatcagttga attttgtatt tctttttttta   120

gccatccatt ttctatttta acattgaaaa aaatgtacaa aaggacacag ttttaaccag   180

tttgattttt cttttctata ctttggaggt caagacatct ttatgacaga agaacagaag   240

aaatactata atgcaatgaa aaaattagga tcgaaaaaac cgcaaaagcc tatacctcga   300

ccaggagtaa gaagtatcaa atgatatggg ggaaaataca aaaacaaaaa ctgcatgctt   360

gtctcacaaa aaagaaaagt aagctaaaca ttt   393

<210> 31
<211> 539
<212> DNA
<213> Homo sapiens

<400> 31

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tgcaagaaac tagaaagtca attaatgcag aaagtactta atgctaatgc acatgagaaa   120

aactcctttg ttgttaaaag catttctatt tctctacaga acaaatttca aggaatggtc   180

tttgacttcg taaccagaca agttttgac ataagcatca tgattctcat ctgtcttaac   240

atggtcacaa tgatggtgga aacagatgac cagagtgaat atgtgactac catttgtca   300

cgcatcaatc tggtgttcat tgtgctattt actggagagt gtgtactgaa actcatctct   360

ctacgccatt attattttac cattggatgg aatattttg attttgtggt tgtcattctc   420

tccattgtag gtaagaaata tttaaagttc ttaaattcag ttaaataaaa gtgaaagctg   480

aaacaatcaa gattagattc aagatcatcc cagcaatcag agataatcac tgtaaatat   539

<210> 32
<211> 3403
<212> DNA
<213> Homo sapiens

<400> 32
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ccttggagct ttagaagaaa catatgttta ttttaacgca tgatttcttc actggttggt   120

attctcattg tttattcata ggtatgtttc ttgccgagct gatagaaaag tatttcgtgt   180

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cacccattct caacagtaag ccacccgact gtgaccctaa taaagttaac cctggaagct   540

cagttaaggg agactgtggg aacccatctg ttggaatttt ctttttgtc agttacatca   600

tcatatcctt cctggttgtg gtgaacatgt acatcgcggt catcctggag aacttcagtg   660

ttgctactga agaaagtgca gagcctctga gtgaggatga ctttgagatg ttctatgagg   720

tttgggagaa gtttgatccc gatgcaactc agttcatgga atttgaaaaa ttatctcagt   780

ttgcagtgcg cttgaaccgc ctctcaatct gccacaacca aacaaactcc agctcattgc   840

catggatttg cccatggtga gtggtgaccg gatccactgt cttgatatct tatttgcttt   900

tacaaagcgg gttctaggag agagtggaga gatggatgct ctacgaatac agatggaaga   960

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gcgattcatg gcttccaatc cttccaaggt ctcctatcag ccaatcacta ctactttaaa    1020

acgaaaacaa gaggaagtat ctgctgtcat tattcagcgt gcttacagac gccacctttt    1080

aaagcgaact gtaaaacaag cttcctttac gtacaataaa aacaaaatca aaggtggggc    1140

taatcttctt ataaagaag acatgataat tgacagaata aatgaaaact ctattacaga     1200

aaaaactgat ctgaccatgt ccactgcagc ttgtccacct tcctatgacc gggtgacaaa    1260

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aaggggagat gaccttgaca ggaggttact gttctcacta ccagctgaca ctgctgaaga    1560

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ttttgggggtt gtttaacatg aaacacttta gtgtagtaat tgtatccact gtttgcattt    1680

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acacaaagtc gtggtttgca tgagggcatg ctgcacttag agatcatgca tgagaaaaag    1920

tcacaagaaa aacaaattct taaatttcac catatttctg ggaggggtaa ttgggtgata    1980

agtggaggtg ctttgttgat cttgttttgc gaaatccagc ccctagacca agtagattat    2040

ttgtgggtag gccagtaaat cttagcaggt gcaaacttca ttcaaatgtt tggagtcata    2100

aatgttatgt ttcttttttgt tgtattaaaa aaaaaacctg aatagtgaat attgccCctc    2160

accctccacc gccagaagac tgaattgacc aaaattactc tttataaatt tctgcttttt    2220

cctgcacttt gtttagccat cttcggctct cagcaaggtt gacactgtat atgttaatga    2280

aatgctattt attatgtaaa tagtcatttt accctgtggt gcacgtttga gcaaacaaat    2340

aatgacctaa gcacagtatt tattgcatca aatatgtacc acaagaaatg tagagtgcaa    2400

gctttacaca ggtaataaaa tgtattctgt accatttata gatagtttgg atgctatcaa    2460

tgcatgttta tattaccatg ctgctgtatc tggtttctct cactgctcag aatctcattt    2520

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aagtcattaa gcaatagttt gcagcacttt aacagctttt tggttatttt tacattttaa    2640

gtggataaca tatggtatat agccagactg tacagacatg tttaaaaaaa cacactgctt    2700
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aacctattaa atatgtgttt agaattttat aagcaaatat aaatactgta aaaagtcact 2760

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atcacaatca cttttcttac tttctgtcca tagtactttt tcatgaaaga aatttgctaa 2880

ataagacatg aaaacaagac tgggtagttg tagatttctg ctttttaaat tacatttgct 2940

aattttagat tatttcacaa ttttaaggag caaaataggt tcacgattca tatccaaatt 3000

atgctttgca attggaaaag ggtttaaaat tttatttata tttctggtag tacctgcact 3060

aactgaattg aaggtagtgc ttatgttatt tttgttcttt ttttctgact tcggtttatg 3120

tttttcatttc tttggagtaa tgctgctcta gattgttcta aatagaatgt gggcttcata 3180

attttttttt ccacaaaaac agagtagtca acttatatag tcaattacat caggacattt 3240

tgtgtttctt acagaagcaa accataggct cctcttttcc ttaaaactac ttagataaac 3300

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tttaaaatgt gcaaaactaa taaagattac attttttatt tta 3403

<210> 33
<211> 8349
<212> DNA
<213> Homo sapiens

<400> 33
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ctggtaccgc caggacctga cagcttccgc ttctttacca gggaatccct tgctgctatt 180

gaacaacgca ttgcagaaga gaaagctaag agacccaaac aggaacgcaa ggatgaggat 240

gatgaaaatg gcccaaagcc aaacagtgac ttggaagcag gaaaatctct tccatttatt 300

tatggagaca ttcctccaga gatggtgtca gtgcccctgg aggatctgga cccctactat 360

atcaataaga aaacgtttat agtattgaat aaagggaaag caatctctcg attcagtgcc 420

accccctgccc tttacatttt aactcccttc aaccctatta gaaaattagc tattaagatt 480

ttggtacatt ctttattcaa tatgctcatt atgtgcacga ttcttaccaa ctgtgtattt 540

atgaccatga gtaaccctcc agactggaca aagaatgtgg agtatacctt tacaggaatt 600

tatacttttg aatcacttat taaaatactt gcaaggggct tttgtttaga agatttcaca 660

tttttacggg atccatggaa ttggttggat ttcacagtca ttactttttgc atatgtgaca 720

gagtttgtgg acctgggcaa tgtctcagcg ttgagaacat tcagagttct ccgagcattg 780

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aaaacaattt cagtcattcc aggcctgaag accattgtgg gggccctgat ccagtcagtg    840

aagaagcttt ctgatgtcat gatcttgact gtgttctgtc taagcgtgtt tgcgctaata    900

ggattgcagt tgttcatggg caacctacga aataaatgtt tgcaatggcc tccagataat    960

tcttcctttg aaataaatat cacttccttc tttaacaatt cattggatgg gaatggtact   1020

actttcaata ggacagtgag catatttaac tgggatgaat atattgagga taaaagtcac   1080

ttttattttt tagaggggca aaatgatgct ctgctttgtg gcaacagctc agatgcaggc   1140

cagtgtcctg aaggatacat ctgtgtgaag gctggtagaa accccaacta tggctacacg   1200

agctttgaca cctttagttg ggcctttttg tccttatttc gtctcatgac tcaagacttc   1260

tgggaaaacc tttatcaact gacactacgt gctgctggga aaacgtacat gatatttttt   1320

gtgctggtca ttttcttggg ctcattctat ctaataaatt tgatcttggc tgtggtggcc   1380

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taaaaagaaa ccaagaattt tccattttgt gatcaattgt ttacagcccg tgatggtgat    6180

gtgtttgtgt caacaggact cccacaggag gtctatgcca aactgactgt ttttacaaat    6240

gtatacttaa ggtcagtgcc tataacaaga cagagacctc tggtcagcaa actggaactc    6300

agtaaactgg agaaatagta tcgatgggag gtttctattt tcacaaccag ctgacactgc    6360

tgaagagcag aggcgtaatg gctactcaga cgataggaac caatttaaag gggggaggga    6420

agttaaattt ttatgtaaat tcaacatgtg acacttgata atagtaattg tcaccagtgt    6480

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ttttcttttt aattcacagg ttgtttacta ttatatgtga ctatttttgt aaatgggttt    6600

gtgtttgggg agagggatta aagggaggga attctacatt tctctattgt attgtataac    6660

tggatatatt ttaaatggag gcatgctgca attctcattc acacataaaa aaatcacatc    6720

acaaaaggga agagtttact tcttgtttca ggatgttttt agatttttga ggtgcttaaa    6780

tagctattcg tattttttaag gtgtctcatc cagaaaaaat ttaatgtgcc tgtaaatgtt    6840

ccatagaatc acaagcatta aagagttgtt ttattttttac ataacccatt aaatgtacat    6900

gtatatatgt atatatgtat atgtgcgtgt atatacatat atatgtatac acacatgcac    6960

acacagagat atacacatac cattacattg tcattcacag tcccagcagc atgactatca    7020

catttttgat aagtgtcctt tggcataaaa taaaaatatc ctatcagtcc tttctaagaa    7080

gcctgaattg accaaaaaac atccccacca ccactttata aagttgattc tgctttatcc    7140

tgcagtattg tttagccatc ttctgctctt ggtaaggttg acatagtata tgtcaattta    7200

aaaaataaaa gtctgctttg taaatagtaa ttttacccag tggtgcatgt ttgagcaaac    7260

aaaaatgatg atttaagcac actacttatt gcatcaaata tgtaccacag taagtatagt    7320

ttgcaagctt tcaacaggta atatgatgta attggttcca ttatagtttg aagctgtcac    7380

tgctgcatgt ttatcttgcc tatgctgctg tatcttattc cttccactgt tcagaagtct    7440

aatatgggaa gccatatatc agtggtaaag tgaagcaaat tgttctacca agacctcatt    7500

cttcatgtca ttaagcaata ggttgcagca aacaaggaag agcttcttgc tttttattct    7560
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tccaacctta attgaacact caatgatgaa aagcccgact gtacaaacat gttgcaagct    7620

gcttaaatct gtttaaaata tatggttaga gttttctaag aaaatataaa tactgtaaaa    7680

agttcatttt attttatttt tcagcctttt gtacgtaaaa tgagaaatta aaagtatctt    7740

caggtggatg tcacagtcac tattgttagt ttctgttcct agcacttta aattgaagca    7800

cttcacaaaa taagaagcaa ggactaggat gcagtgtagg tttctgcttt tttattagta    7860

ctgtaaactt gcacacattt caatgtgaaa caaatctcaa actgagttca atgtttattt    7920

gctttcaata gtaatgcctt atcattgaaa gaggcttaaa gaaaaaaaaa atcagctgat    7980

actcttggca ttgcttgaat ccaatgtttc cacctagtct ttttattcag taatcatcag    8040

tcttttccaa tgtttgttta cacagataga tcttattgac ccatatggca ctagaactgt    8100

atcagatata atatgggatc ccagcttttt ttcctctccc acaaaaccag gtagtgaagt    8160

tatattacca gttacagcaa aatactttgt gtttcacaag caacaataaa tgtagattct    8220

ttatactgaa gctattgact tgtagtgtgt tggtgaatgc atgcaggaag atgctgttac    8280

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tgtatttaa                                                             8349
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<210> 35
<211> 2005
<212> PRT
<213> Homo sapiens

<400> 35

Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1   5   10   15

Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20   25   30

Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35   40   45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
    50   55   60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65   70   75   80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
            85   90   95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100   105   110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
            115   120   125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130   135   140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145   150   155   160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
            165   170   175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180   185   190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
    195   200   205

Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
    210   215   220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225   230   235   240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
            245   250   255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
            260   265   270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
            275   280   285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
    290   295   300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
              325   330   335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
              340   345   350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
              355   360   365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
    370   375   380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385   390   395   400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
              405   410   415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
              420   425   430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
          435   440   445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
    450   455   460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465   470   475   480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
              485   490   495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
          500   505   510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
          515   520   525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530   535   540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545   550   555   560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
              565   570   575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
          580   585   590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
          595   600   605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610   615   620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625   630   635   640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
              645   650   655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
          660   665   670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
          675   680   685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
    690   695   700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705   710   715   720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
              725   730   735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
          740   745   750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
          755   760   765

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Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
    770             775             780


Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785             790             795             800


Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
            805             810             815


Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
        820             825             830


Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
        835             840             845


Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
    850             855             860


Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865             870             875             880


Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
            885             890             895


Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
            900             905             910


Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
        915             920             925


Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
    930             935             940


Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945             950             955             960


Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
            965             970             975


Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
        980             985             990
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Ala Thr Asp Asp Asp Asn Glu Met   Asn Asn Leu Gln Ile   Ala Val Gly
     995              1000              1005

Arg Met  Gln Lys Gly Ile Asp  Phe Val Lys Arg Lys  Ile Arg Glu
    1010             1015             1020

Phe Ile  Gln Lys Ala Phe Val  Arg Lys Gln Lys Ala  Leu Asp Glu
    1025             1030             1035

Ile Lys  Pro Leu Glu Asp Leu  Asn Asn Lys Lys Asp  Ser Cys Ile
    1040             1045             1050

Ser Asn  His Thr Thr Ile Glu  Ile Gly Lys Asp Leu  Asn Tyr Leu
    1055             1060             1065

Lys Asp  Gly Asn Gly Thr Thr  Ser Gly Ile Gly Ser  Ser Val Glu
    1070             1075             1080

Lys Tyr  Val Val Asp Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn
    1085             1090             1095

Pro Ser  Leu Thr Val Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp
    1100             1105             1110

Phe Glu  Asn Leu Asn Thr Glu  Glu Phe Ser Ser Glu  Ser Asp Met
    1115             1120             1125

Glu Glu  Ser Lys Glu Lys Leu  Asn Ala Thr Ser Ser  Ser Glu Gly
    1130             1135             1140

Ser Thr  Val Asp Ile Gly Ala  Pro Ala Glu Gly Glu  Gln Pro Glu
    1145             1150             1155

Val Glu  Pro Glu Glu Ser Leu  Glu Pro Glu Ala Cys  Phe Thr Glu
    1160             1165             1170

Asp Cys  Val Arg Lys Phe Lys  Cys Cys Gln Ile Ser  Ile Glu Glu
    1175             1180             1185

Gly Lys  Gly Lys Leu Trp Trp  Asn Leu Arg Lys Thr  Cys Tyr Lys
    1190             1195             1200

Ile Val  Glu His Asn Trp Phe  Glu Thr Phe Ile Val  Phe Met Ile
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        1205                  1210                    1215


    Leu Leu  Ser Ser Gly Ala Leu  Ala Phe Glu Asp Ile  Tyr Ile Glu
         1220             1225              1230


    Gln Arg  Lys Thr Ile Lys Thr  Met Leu Glu Tyr Ala  Asp Lys Val
         1235             1240              1245


    Phe Thr  Tyr Ile Phe Ile Leu  Glu Met Leu Leu Lys  Trp Val Ala
         1250             1255              1260


    Tyr Gly  Phe Gln Val Tyr Phe  Thr Asn Ala Trp Cys  Trp Leu Asp
         1265             1270              1275


    Phe Leu  Ile Val Asp Val Ser  Leu Val Ser Leu Thr  Ala Asn Ala
         1280             1285              1290


    Leu Gly  Tyr Ser Glu Leu Gly  Ala Ile Lys Ser Leu  Arg Thr Leu
         1295             1300              1305


    Arg Ala  Leu Arg Pro Leu Arg  Ala Leu Ser Arg Phe  Glu Gly Met
         1310             1315              1320


    Arg Ala  Val Val Asn Ala Leu  Leu Gly Ala Ile Pro  Ser Ile Met
         1325             1330              1335


    Asn Val  Leu Leu Val Cys Leu  Ile Phe Trp Leu Ile  Phe Ser Ile
         1340             1345              1350


    Met Gly  Val Asn Leu Phe Ala  Gly Lys Phe Tyr His  Cys Ile Asn
         1355             1360              1365


    Tyr Thr  Thr Gly Glu Met Phe  Asp Val Ser Val Val  Asn Asn Tyr
         1370             1375              1380


    Ser Glu  Cys Lys Ala Leu Ile  Glu Ser Asn Gln Thr  Ala Arg Trp
         1385             1390              1395


    Lys Asn  Val Lys Val Asn Phe  Asp Asn Val Gly Leu  Gly Tyr Leu
         1400             1405              1410


    Ser Leu  Leu Gln Val Ala Thr  Phe Lys Gly Trp Met  Asp Ile Met
         1415             1420              1425
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```
Tyr Ala  Ala Val Asp Ser Arg  Asn Val Glu Leu Gln  Pro Lys Tyr
    1430             1435                 1440

Glu Asp  Asn Leu Tyr Met Tyr  Leu Tyr Phe Val Ile  Phe Ile Ile
    1445             1450                 1455

Phe Gly  Ser Phe Phe Thr Leu  Asn Leu Phe Ile Gly  Val Ile Ile
    1460             1465                 1470

Asp Asn  Phe Asn Gln Gln Lys  Lys Lys Phe Gly Gly  Gln Asp Ile
    1475             1480                 1485

Phe Met  Thr Glu Glu Gln Lys  Lys Tyr Tyr Asn Ala  Met Lys Lys
    1490             1495                 1500

Leu Gly  Ser Lys Lys Pro Gln  Lys Pro Ile Pro Arg  Pro Ala Asn
    1505             1510                 1515

Lys Phe  Gln Gly Met Val Phe  Asp Phe Val Thr Lys  Gln Val Phe
    1520             1525                 1530

Asp Ile  Ser Ile Met Ile Leu  Ile Cys Leu Asn Met  Val Thr Met
    1535             1540                 1545

Met Val  Glu Thr Asp Asp Gln  Ser Gln Glu Met Thr  Asn Ile Leu
    1550             1555                 1560

Tyr Trp  Ile Asn Leu Val Phe  Ile Val Leu Phe Thr  Gly Glu Cys
    1565             1570                 1575

Val Leu  Lys Leu Ile Ser Leu  Arg Tyr Tyr Tyr Phe  Thr Ile Gly
    1580             1585                 1590

Trp Asn  Ile Phe Asp Phe Val  Val Val Ile Leu Ser  Ile Val Gly
    1595             1600                 1605

Met Phe  Leu Ala Glu Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr
    1610             1615                 1620

Leu Phe  Arg Val Ile Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg
    1625             1630                 1635
```

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu
    1640   1645   1650

Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe
    1655   1660   1665

Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala
    1670   1675   1680

Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn Phe Glu
    1685   1690   1695

Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser
    1700   1705   1710

Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro
    1715   1720   1725

Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys
    1730   1735   1740

Gly Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser
    1745   1750   1755

Tyr Ile Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala
    1760   1765   1770

Val Ile Leu Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu
    1775   1780   1785

Pro Leu Ser Glu Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu
    1790   1795   1800

Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu
    1805   1810   1815

Ser Asp Phe Ala Asp Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys
    1820   1825   1830

Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser
    1835   1840   1845

```
Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys
    1850              1855              1860

Arg Val  Leu Gly Glu Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln
    1865              1870              1875

Met Glu  Glu Arg Phe Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr
    1880              1885              1890

Glu Pro  Ile Thr Thr Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser
    1895              1900              1905

Ala Ile  Ile Ile Gln Arg Ala  Tyr Arg Arg Tyr Leu  Leu Lys Gln
    1910              1915              1920

Lys Val  Lys Lys Val Ser Ser  Ile Tyr Lys Lys Asp  Lys Gly Lys
    1925              1930              1935

Glu Cys  Asp Gly Thr Pro Ile  Lys Glu Asp Thr Leu  Ile Asp Lys
    1940              1945              1950

Leu Asn  Glu Asn Ser Thr Pro  Glu Lys Thr Asp Met  Thr Pro Ser
    1955              1960              1965

Thr Thr  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Glu Lys
    1970              1975              1980

Glu Lys  Phe Glu Lys Asp Lys  Ser Glu Lys Glu Asp  Lys Gly Lys
    1985              1990              1995

Asp Ile  Arg Glu Ser Lys Lys
    2000              2005


<210>  36
<211>  2005
<212>  PRT
<213>  Homo sapiens

<400>  36

Met Ala Gln Ser Val Leu Val Pro Pro Gly Pro Asp Ser Phe Arg Phe
1               5               10                  15


Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
            20              25                  30
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```
Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
        35              40              45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
        50              55              60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65              70              75              80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
            85              90              95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
            100             105             110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
        115             120             125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
    130             135             140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145             150             155             160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
            165             170             175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
            180             185             190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
        195             200             205

Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
    210             215             220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225             230             235             240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
            245             250             255
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Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
        260                 265                 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
        275                 280                 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
        290                 295                 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305                 310                 315                 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
                325                 330                 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
        340                 345                 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
        355                 360                 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
370                 375                 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385                 390                 395                 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
                405                 410                 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
        420                 425                 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
        435                 440                 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
        450                 455                 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465                 470                 475                 480
```

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
                485   490   495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Gln Lys Glu
            500   505   510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
        515   520   525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
    530   535   540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545   550   555   560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
            565   570   575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
            580   585   590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
        595   600   605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
    610   615   620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625   630   635   640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
            645   650   655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
            660   665   670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
            675   680   685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
    690   695   700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu

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                 705                    710                    715                    720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
                725                    730                    735


Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
                740                    745                    750


Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
                755                    760                    765


Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
    770                    775                    780


Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785                    790                    795                    800


Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
                805                    810                    815


Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
                820                    825                    830


Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
                835                    840                    845


Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
    850                    855                    860


Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865                    870                    875                    880


Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
                885                    890                    895


Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
                900                    905                    910


Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
                915                    920                    925


Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
    930                    935                    940
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Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945                 950             955                 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
                965             970                 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
            980             985                 990

Ala Thr Asp Asp Asp Asn Glu Met  Asn Asn Leu Gln Ile  Ala Val Gly
        995             1000                1005

Arg Met  Gln Lys Gly Ile Asp  Phe Val Lys Arg Lys  Ile Arg Glu
    1010                1015                1020

Phe Ile  Gln Lys Ala Phe Val  Arg Lys Gln Lys Ala  Leu Asp Glu
    1025                1030                1035

Ile Lys  Pro Leu Glu Asp Leu  Asn Asn Lys Lys Asp  Ser Cys Ile
    1040                1045                1050

Ser Asn  His Thr Thr Ile Glu  Ile Gly Lys Asp Leu  Asn Tyr Leu
    1055                1060                1065

Lys Asp  Gly Asn Gly Thr Thr  Ser Gly Ile Gly Ser  Ser Val Glu
    1070                1075                1080

Lys Tyr  Val Val Asp Glu Ser  Asp Tyr Met Ser Phe  Ile Asn Asn
    1085                1090                1095

Pro Ser  Leu Thr Val Thr Val  Pro Ile Ala Val Gly  Glu Ser Asp
    1100                1105                1110

Phe Glu  Asn Leu Asn Thr Glu  Glu Phe Ser Ser Glu  Ser Asp Met
    1115                1120                1125

Glu Glu  Ser Lys Glu Lys Leu  Asn Ala Thr Ser Ser  Ser Glu Gly
    1130                1135                1140

Ser Thr  Val Asp Ile Gly Ala  Pro Ala Glu Gly Glu  Gln Pro Glu
    1145                1150                1155
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Val Glu Pro Glu Glu Ser Leu Glu Pro Glu Ala Cys Phe Thr Glu
    1160   1165   1170

Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile Ser Ile Glu Glu
    1175   1180   1185

Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr Cys Tyr Lys
    1190   1195   1200

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile
    1205   1210   1215

Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu
    1220   1225   1230

Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val
    1235   1240   1245

Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala
    1250   1255   1260

Tyr Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp
    1265   1270   1275

Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala
    1280   1285   1290

Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu
    1295   1300   1305

Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met
    1310   1315   1320

Arg Ala Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met
    1325   1330   1335

Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile
    1340   1345   1350

Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn
    1355   1360   1365

Tyr Thr Thr Gly Glu Met Phe Asp Val Ser Val Val Asn Asn Tyr
    1370   1375   1380

Ser Glu Cys Lys Ala Leu Ile Glu Ser Asn Gln Thr Ala Arg Trp
    1385   1390   1395

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Leu Gly Tyr Leu
    1400   1405   1410

Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met
    1415   1420   1425

Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr
    1430   1435   1440

Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile
    1445   1450   1455

Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile
    1460   1465   1470

Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
    1475   1480   1485

Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys
    1490   1495   1500

Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn
    1505   1510   1515

Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe
    1520   1525   1530

Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met
    1535   1540   1545

Met Val Glu Thr Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu
    1550   1555   1560

Tyr Trp Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys
    1565   1570   1575

Val Leu Lys Leu Ile Ser Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly

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             1580                    1585                    1590


Trp Asn  Ile Phe Asp Phe Val  Val Val Ile Leu Ser  Ile Val Gly
    1595                 1600                 1605


Met Phe  Leu Ala Glu Leu Ile  Glu Lys Tyr Phe Val  Ser Pro Thr
    1610                 1615                 1620


Leu Phe  Arg Val Ile Arg Leu  Ala Arg Ile Gly Arg  Ile Leu Arg
    1625                 1630                 1635


Leu Ile  Lys Gly Ala Lys Gly  Ile Arg Thr Leu Leu  Phe Ala Leu
    1640                 1645                 1650


Met Met  Ser Leu Pro Ala Leu  Phe Asn Ile Gly Leu  Leu Leu Phe
    1655                 1660                 1665


Leu Val  Met Phe Ile Tyr Ala  Ile Phe Gly Met Ser  Asn Phe Ala
    1670                 1675                 1680


Tyr Val  Lys Arg Glu Val Gly  Ile Asp Asp Met Phe  Asn Phe Glu
    1685                 1690                 1695


Thr Phe  Gly Asn Ser Met Ile  Cys Leu Phe Gln Ile  Thr Thr Ser
    1700                 1705                 1710


Ala Gly  Trp Asp Gly Leu Leu  Ala Pro Ile Leu Asn  Ser Gly Pro
    1715                 1720                 1725


Pro Asp  Cys Asp Pro Asp Lys  Asp His Pro Gly Ser  Ser Val Lys
    1730                 1735                 1740


Gly Asp  Cys Gly Asn Pro Ser  Val Gly Ile Phe Phe  Phe Val Ser
    1745                 1750                 1755


Tyr Ile  Ile Ile Ser Phe Leu  Val Val Val Asn Met  Tyr Ile Ala
    1760                 1765                 1770


Val Ile  Leu Glu Asn Phe Ser  Val Ala Thr Glu Glu  Ser Ala Glu
    1775                 1780                 1785


Pro Leu  Ser Glu Asp Asp Phe  Glu Met Phe Tyr Glu  Val Trp Glu
    1790                 1795                 1800
```

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Lys Phe  Asp Pro Asp Ala Thr  Gln Phe Ile Glu Phe  Ala Lys Leu
    1805             1810              1815

Ser Asp  Phe Ala Asp Ala Leu  Asp Pro Pro Leu Leu  Ile Ala Lys
    1820             1825              1830

Pro Asn  Lys Val Gln Leu Ile  Ala Met Asp Leu Pro  Met Val Ser
    1835             1840              1845

Gly Asp  Arg Ile His Cys Leu  Asp Ile Leu Phe Ala  Phe Thr Lys
    1850             1855              1860

Arg Val  Leu Gly Glu Ser Gly  Glu Met Asp Ala Leu  Arg Ile Gln
    1865             1870              1875

Met Glu  Glu Arg Phe Met Ala  Ser Asn Pro Ser Lys  Val Ser Tyr
    1880             1885              1890

Glu Pro  Ile Thr Thr Thr Leu  Lys Arg Lys Gln Glu  Glu Val Ser
    1895             1900              1905

Ala Ile  Ile Ile Gln Arg Ala  Tyr Arg Arg Tyr Leu  Leu Lys Gln
    1910             1915              1920

Lys Val  Lys Lys Val Ser Ser  Ile Tyr Lys Lys Asp  Lys Gly Lys
    1925             1930              1935

Glu Cys  Asp Gly Thr Pro Ile  Lys Glu Asp Thr Leu  Ile Asp Lys
    1940             1945              1950

Leu Asn  Glu Asn Ser Thr Pro  Glu Lys Thr Asp Met  Thr Pro Ser
    1955             1960              1965

Thr Thr  Ser Pro Pro Ser Tyr  Asp Ser Val Thr Lys  Pro Glu Lys
    1970             1975              1980

Glu Lys  Phe Glu Lys Asp Lys  Ser Glu Lys Glu Asp  Lys Gly Lys
    1985             1990              1995

Asp Ile  Arg Glu Ser Lys Lys
    2000             2005
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<210> 37
<211> 912
<212> DNA
<213> Homo sapiens

<400> 37
gaattcttta tatgggttga atgactttct gacatagcaa ataaaaagca tgaggagaag   60

cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatgtt tcgttccaag   120

aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc   180

tgtgtgtacg ctgtgaaggt gtttctcttc acagttcccc gccctctagt ggtagttaca   240

ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat   300

cctttacag gaagttaggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaa   360

aaaaaagatt ttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc   420

agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaatgt tttattattc   480

ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa   540

atctgcagag ggaccacttt cattttgaag ctgctggctg catgttttag catgtctctt   600

ctattagaga atccaggcat ggcagtttcc tcccccagtg tgcaaggacc atcttcatgc   660

ctatgtctgt cgctaggcat gagggtctct aggaatgggt gaaaaaaatg agggatgttt   720

tggaggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctggtt   780

tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct   840

ctgttttatc tggtgtatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat   900

gcattccata ta   912

<210> 38
<211> 722
<212> DNA
<213> Homo sapiens

<400> 38
ctcagtgcat gtaactgaca caatcacctc tatctaatgg tcatgcttct tacctcctgt   60

tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat   120

ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc   180

ccttgctgct attgaacaac gcattgcaga agagaaagct aagagaccca acaggaacg   240

caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggaag cagsaaaatc   300

tcttccattt atttatggag acattcctcc agagatggtg tcagtgcccc tggaggatct   360

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ggacccctac tatatcaata agaaagtgag ttcttagtca agttgccttc actgcctatt    420

tactaattgg ttctgggcta gtcccaggga tgatggtgaa gaaggctggc ctccttccct    480

ctgtctaaag tatcactaag atgctggatg ggcctgaccg tgtaatggac caatgatcct    540

agaagtcttt tggaagcact catttgaacc tgcatttgtg agacaggcag agaactggtg    600

aggcatcctc cagcgcggga attaaggaag gacaaaagcc tattcacctt cttgaataca    660

aattatatgc ttaaaccagt gtaaattgac cctgattccc taataatgtt gagaagcaaa    720

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<210> 39
<211> 561
<212> DNA
<213> Homo sapiens

<400> 39
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cctatggcat tgatcacaaa ttttcttaat aatcctcatg tcatttatca aatttaggaa     60

agtttatagt gctcagaaaa aaaaagcatc tatcttcatg tcatatgatg gtaattatta    120

tgttatacac tattttacag ggcaatattt ataataatg gttttacttt tctcttaaaa     180

tattcttaat atatattcta agttttgttt tatgtgttgt gttttctttt tcagacgttt    240

atagtattga ataaagggaa agcaatctct cgattcagtg ccacccctgc cctttacatt    300

ttaactccct tcaaccctat tagaaaatta gctattaaga ttttggtaca ttcatatcct    360

ttttcaaatc gtcacttaat atgattttct tctttgacca agttattgag ctacacattt    420

tccaaaatat ctgtggttgg caatgttatg tgttctttct ttttctttcc ttttactcaa    480

tcgttagcat gttgcaaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa    540

gtgtttcttc tctacccaac t                                              561
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<210> 40
<211> 510
<212> DNA
<213> Homo sapiens

<400> 40
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acctaaatag cctcaaaata gttgatggct tggcctgaag acaagatcta aatatgaggt     60

tgctgagtta tagaaatggc aaaaaaaagg gtcaataata gaataataag caacaaaata    120

atagtaagca ctaaagtttt aaacttcatg gtggtgaagg catggtagtg cataaaagta    180

agattttttcc attgaacttt gtcttccttg acgatattct actttattca atatgctcat    240
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tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac   300

aaagaatgtg gagtaagtat aaatatttt caatattgac ctccctttat gtttcatatt   360

gtgctttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta   420

accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagcttgtag   480

tgggctcact tagttgtgta aattactgca   510

<210> 41
<211> 370
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (293)..(293)
<223> n= a, c, t or g

<400> 41
taagatatgt acttgtaaat taaccactag attttaatg tgagcttggc tattgtctct   60

caggtatacc tttacaggaa tttatacttt tgaatcactt attaaaatac ttgcaagggg   120

cttttgttta gaagatttca cattttacg ggatccatgg aattggttgg atttcacagt   180

cattactttt gcgtaagtat cttaatacat tttctatcct ggaagagtaa atcactggtg   240

ggagcctata ctatattttc cttggtggct tgccttgaca gaccaagcat ttntcttagt   300

aatcatagtt ttcttccaat caaattatcc agtttggaga aattaggaac tatcatagta   360

aattacatgg   370

<210> 42
<211> 370
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (133)..(133)
<223> n = a, c, t or g

<400> 42
caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat   60

gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggtcttg   120

atgaaagacc aangaagacg tagatttccc taaattctga ataactctga tttaattcta   180

caggtatgta acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt   240

cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataaggtgg   300

taggcccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc   360

cctattacag   370

<210> 43
<211> 410
<212> DNA
<213> Homo sapiens

<400> 43
gtaagaagaa aatggtataa ggtggtaggc cccttatatc tccaactgtt tcttgtgttc   60

tgtcattgtg tttgtgtgtg aacccctat tacagatatg tgacagagtt tgtggacctg   120

ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc   180

attccaggtg agagctaggt taaacaccga ggctgacttt agctacagtg gtgctacaat   240

cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa   300

gcaagaattg gtacatcatt ttttggatgg atttgattct ttgctttta cccgttgctt   360

tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcatga   410

<210> 44
<211> 1066
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (229)..(229)
<223> n = a, c, t or g

<400> 44
aaagagtgtt tggaaataca catttggttc atttccattc acagttttct aatgaacata   60

caagttctgc tttcattcat tttcaccagc tagtaggctt ttcatgaaaa tgttattcaa   120

tcacaaacat taaactaata ttgttggcat tctgcatgac atttttattt tccaggccaa   180

gctcatgata ttttgccgg taaaatagct gttgagtagt atatttaant tcccccttct   240

gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct   300

ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca   360

gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt   420

tgaaataaat atcacttcct tctttaacaa ttcattggat gggaatggta ctactttcaa   480

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taggacagtg agcatattta actgggatga atatattgag gataaaagta agatatactc      540

tataaaccat taagttgttt agttctctaa atattaaata ttatatataa tggaaattat      600

ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa      660

agagatatca aaggatacct tattctattt ttsttatctg tccattgata tagtaaaagt      720

tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata      780

ttaaaaaagg tttatttggt agacattaat caggtttttc agtcatttta ataaataagt      840

cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa      900

taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa      960

ctagagaaac catttatcaa gatgaaataa gaatttgtgt gctcctcaga aggttaagta     1020

accctgattt agccattcac ttcatccata ttctaattag tccctt                    1066


<210>    45
<211>    385
<212>    DNA
<213>    Homo sapiens

<400>    45
gttcaattat tgtgaaaaat cttctttagc catatatatt tattagttta tccatctcat       60

tatgattgaa aacatttgtg agctttgcca cctaaacagg gtggctgaag tgttttacag      120

gattttaatg attctttcta ttcctttctc tttaaatagg tcacttttat tttttacagg      180

ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct      240

actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccactcatcc      300

agtcccacca ctcctcactc aaaaccctcc ataaattcta cttcacggtg actctcagaa      360

tgaccaggat aagtgtagat tctca                                             385


<210>    46
<211>    430
<212>    DNA
<213>    Homo sapiens

<400>    46
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt       60

cattatataa atcagtccac ttagtgctga gttaagtact gggtaaggtg agagaaatcg      120

gctttttttct agtgcctgta taaaacagac attggcatat attaaaacag gaaaaccaat      180

tagcagactt gccgttattg actycctctc tttcctctaa cctaattaca gccagtgtcc      240

tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga      300
```

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cacctttagt tgggcctttt tgtccttatt tcgtctcatg actcaagact tctgggaaaa       360

cctttatcaa ctggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac       420

tcaagagaat                                                              430


<210>  47
<211>  646
<212>  DNA
<213>  Homo sapiens

<400>  47
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaatttatt        60

aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt       120

ttgtgctggt cattttcttg ggctcattct atctaataaa tttgatcttg gctgtggtgg       180

ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg       240

aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagtgaa       300

caagcatacg gtcctttgtt tttctgtatc taaattcttt aacctaaatg ttgaggtcag       360

tggcaaggta gttgacatta gaaataggtc atatgtgttt ggtaagtgct aggagcctgt       420

ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa       480

tggcatcaaa aaatggataa ttataattgc tttactgaca ttttttttctc ccttgtgact       540

ccttgaggaa attaatgatt aacaaaggcc tcatgtactc aaacttgcag agtagataaa       600

cctacatgtc ctcagttgaa gtattttctt aggggaagag gaattc                      646


<210>  48
<211>  711
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<222>  (164)..(164)
<223>  n = a, c, t or g


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tatgtatcat cttccatatg aatgcgcatt ttactctttg attggtctaa taacagtgta        60

ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcatgatat       120

tgaagctcaa ttaagcagta acatgataat tattttttaa gatnatatgc aacttcccac       180

atactttgcg cccttctagg cggcagctgc agccgcatct gctgaatcaa gagacttcag       240
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tggtgctggt gggataggag ttttttcaga gagttcttca gtagcatcta agttgagctc        300

caaaagtgaa aaagagctga aaaacagaag aaagaaaaag aaacagaaag aacagtctgg        360

agaagaagag aaaaatgaca gagtcctaaa atcggaatct gaagacagca taagaagaaa        420

aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc        480

acaccaggta aaaatattaa attacatgaa ttgtgttctc ataaattttt taaaagaata        540

tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt        600

agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt        660

ttggaatccc aggaaggaaa ttttagatcc ctctgggttt ggaaaaattt g                711


<210>  49
<211>  1026
<212>  DNA
<213>  Homo sapiens

<400>  49
ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa         60

gatggaaaat ggaggaagga gaaaaagcga gagtgaaata gaaaaggtga accttgtaga        120

aagtgccaaa atgccaccag cagtcatcag aggggtgctt cttccacat gtccaatgac         180

ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc        240

cagctcttaa ctctcttcat ctcatttttg tttcttttct tgttattcat agtccttact        300

gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt        360

cagaggtcga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac        420

ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg        480

gcgccacagc aatgtcagcc aggccagccg tgcctccagg gtgctcccca tcctgcccat        540

gaatgggaag atgcatagcg ctgtggactg caatggtgtg gtctccctgg tcgggggccc        600

ttctaccctc acatctgctg ggcagctcct accagaggtg aggccaacyy magattgcag        660

ctgatgtgaa gagagttgtg actggtgcag gcaggagtgy ttttccattt mcacatctaa        720

gaatttkttg agtttsttgc ccaaaggctg ggagtttgtt caatcaagct gttaactgtc        780

ttgtgaaact sttctattca gactttycta caaagtaatt aaaaacctag gttggctgtc        840

agagaatata attagamgtm atctttcatc ayyattacta tggtatgaaa ctcgccaaaa        900

agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg        960

aaattaatgc tcacaaatta aataaatact taaggatttt gtgattgttg ttcatttaaa       1020
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aggaga

<210> 50
<211> 601
<212> DNA
<213> Homo sapiens

<400> 50

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ataggaaagc ccaccttgac aaacccaggg ctccccaaaa gctgaaaatc tgacagactt      60

taaacaaccc ccaaataatt atcattccaa caatatctta gtgagctttt tacatctgag     120

aaagcatggt gtatatttag ttaaataaca cctgttgtag gaatgctttg ggctttgctg     180

ctttcaaaaa tagtggttat ttcatctgaa attctacttc tagggcacaa ctactgaaac     240

agaaataaga aagagacggt ccagttctta tcatgtttcc atggatttat tggaagatcc     300

tacatcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaaggtat     360

gttaaaagtc ctgcgtcaca gttacttggt gctttcctaa tgatgaaaaa cacttcataa     420

atttcaataa aatacttcct gacttgatat tgtatcatta ttacacattt tactaaataa     480

cagtaaaatc cgtgcataac tcatggattc atatattcca cagatttttt ttttttatat     540

ttagcctgta gaaagctgct gcaaatgtaa ggtatatttg aacaccactt tcataactta     600

a                                                                     601
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<210> 51
<211> 645
<212> DNA
<213> Homo sapiens

<400> 51

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gcttactagc ctttctgtac tgatcctttc tatgacagca aacccattgt aaaattttcc      60

ctgttcctcc agcagattaa cccataatat cttttaacaa ctttagattt tttaaattcc     120

ttttaattta aaccaaatct gcttaataga aagtaagcag ttttcatgag gattctaact     180

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aacctggttg taatggaccc atttgttgac ctggccatca ccatctgcat tgtcttaaat     360

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gttggaaacc tggtaagcct cactgagagt ttctcttcct cttgaaagag tttataattg     480

ccttagtgaa ttttacatat tgctctcaaa ttaaatatca actaattggc catgtatatc     540

ttgacatcaa atgtttagca tcccttttaa ataacaaaaa aatgttgcta ccatagtgca     600
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<211>  485
<212>  DNA
<213>  Homo sapiens

<400>  52
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atttaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat      180

ccatattatt actttcaaga aggctggaat attttttgatg gttttattgt gagccttagt      240

ttaatggaac ttggtttggc aaatgtggaa ggattgtcag ttctccgatc attccggctg      300

gtaaattaac tgggagtgtt cataaaaatgt actttrtaat taattagtct tcattctcat      360

ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaataccttt ctaaaacaga      420

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ttaaa                                                                  485


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<212>  DNA
<213>  Homo sapiens

<400>  53
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tatataataa taaaataaaa taaaaataaa aataaaaaaa taaaaataaa ataaaattgc      120

agattttttt agaaatgcag agattaacac tgttcttgct tttatttcca gctccgagtt      180

ttcaagttgg caaaatcttg gccaactcta aatatgctaa ttaagatcat tggcaattct      240

gtgggggctc taggaaacct caccttggta ttggccatca tcgtcttcat ttttgctgtg      300

gtcggcatgc agctctttgg taagagctac aaagaatgtg tctgcaagat ttccaatgat      360

tgtgaactcc cacgctggca catgcatgac ttttttccact ccttcctgat cgtgttccgc      420

gtgctgtgtg gagagtggat agagaccatg tgggactgta tggaggtcgc tggccaaacc      480

atgtgcctta ctgtcttcat gatggtcatg gtgattggaa atctagtggt atgtagcaaa      540

aacattttcc tcattttcat taaaaataat gtaatcatta aaaagtgttc aactgaagaa      600

ta                                                                     602
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<211> 803
<212> DNA
<213> Homo sapiens

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tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa   180

actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttcctgctgt   240

gtttcaggtt ctgaacctct tcttggcctt gcttttgagt tccttcagtt ctgacaatct   300

tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca   360

gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cctttgttag   420

gaagcagaaa gctttagatg aaattaaacc gcttgaagat ctaaataata aaaaagacag   480

ctgtatttcc aaccatacca ccatagaaat aggcaaagac ctcaattatc tcaaagacgg   540

aaatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga   600

ttacatgtca tttataaaca accctagcct cactgtgaca gtaccaattg ctgttggaga   660

atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaag   720

caaagaggta aaatgttaaa taaggagata ttttggtgta tataatctgt gttaaatatc   780

aggtgtttaa tgcgtgtctc tgt   803

<210> 55
<211> 615
<212> DNA
<213> Homo sapiens

<220>
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<222> (90)..(90)
<223> n = a, c, t or g

<220>
<221> misc_feature
<222> (378)..(386)
<223> n = a, c, t or g

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aaaaaaaata ctatggtgtt gtatctaatn ttgtgacccc tgacctttac caaagcggat   120

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tggcattatg tttaagttct taattacaga tcaagaaaaa tgcatacaga agatggggggg    180

gggcacacct aattaatttt tatatttaga ttaaagaaaa taattaaatg tgttttttttg    240

tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat    300

tggagctccc gccgagggag aacagcctga ggttgaacct gaggaatccc ttgaacctga    360

agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc    420

ctctttttcta cccatttttt cctatttatt taaatgtctg tttatttgtc taccatctag    480

ttcatctatc tatctgtatc tatctatcta tctatctatc tagtaatcat ctatacctat    540

ccaacaactg tacatttatt tgttttttttt ttttgcattt gctgtttgaa aaaaaatgca    600

acgttttaaa ggcaa                                                     615


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<212>   DNA
<213>   Homo sapiens

<400>   56
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gtcttcattt ttttcccaca tattttagac tgtgtacgga agttcaagtg ttgtcagata    180

agcatagaag aaggcaaagg gaaactctgg tggaatttga ggaaaacatg ctataagata    240

gtggagcaca attggttcga aaccttcatt gtcttcatga ttctgctgag cagtggggct    300

ctggtaggtg atgcatgatc cactccttca cctttcatct gaaatctttt ccctttccct    360

tcaatcaact catattaccc acttttaaat taaggtgttt                          400


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<211>   560
<212>   DNA
<213>   Homo sapiens

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agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa    180

aatttaatag aattttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa    240

accattaaga ccatgttaga atatgctgac aaggttttca cttacatatt cattctggaa    300
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atgctgctaa agtgggttgc atatggtttt caagtgtatt ttaccaatgc ctggtgctgg   360

ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata   420

tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca   480

gcccaaatat aaattatgtt tctcatttca cagtgagagg atgcctcaaa acattttta   540

ccaatttaaa tacatataca   560

<210> 58
<211> 480
<212> DNA
<213> Homo sapiens

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gcaaggctga actgtgtaga catttttata tgtaaataag aaaattgtgt tgctttttct   180

gtataggtct cactggttag cttaactgca aatgccttgg gttactcaga acttggtgcc   240

atcaaatccc tcagaacact aagagctctg aggccactga gagctttgtc ccggtttgaa   300

ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg   360

acactttgta ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact   420

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<210> 59
<211> 640
<212> DNA
<213> Homo sapiens

<400> 59
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tttgttgttg gctttttcact tattttttcct tctcatcctg tgccaggttg ttgtaaatgc   180

tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggct   240

aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta   300

caccactgga gagatgtttg atgtaagcgt ggtcaacaac tacagtgagt gcaaagctct   360

cattgagagc aatcaaactg ccaggtggaa aaatgtgaaa gtaaactttg ataacgtagg   420

acttggatat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt   480

gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgttagaatg   540

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cttgtacatt gttggcaggg atgtaaatta gtatagcttt                          640


<210>  60
<211>  480
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<213>  Homo sapiens

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agcttattta tatgcctgta ttgaatacat gtcaaataga attttgatca attattcaat    120

ttattttcta aaattataat tttgggaaaa aagaaaatga tatgactttt cttacaggcc    180

acgtttaagg gatggatgga tattatgtat gcagctgttg attcacgaaa tgtaagtcta    240

gttagaggga aattgtttag tttgattaaa tgtatatttc tacaatattg taatttagtg    300

atattgtcaa taaaataaaa ttatgtgctt aatttataaa acccatctat attataagga    360

taaaatattt aatcatacta tttctttcaa aattatcata ggatgatttt ctctaatcac    420

tctgtatctt ttaacatatc ttttctagta tttagcaagg cacctgacac aaaactttat    480


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<211>  366
<212>  DNA
<213>  Homo sapiens

<400>  61
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tataatggtt acaattcttc atattcttta ggtagaatta caacccaagt atgaagacaa    120

cctgtacatg tatctttatt ttgtcatctt tattattttt ggttcattct ttaccttgaa    180

tcttttcatt ggtgtcatca tagataactt caaccaacag aaaaagaaga taagtatatt    240

aaaacttcat ccttgctctg aaatatgaac taaatatttc atactctttc ctttagcctc    300

caaaatgcaa tcaccaaaaa aagaatataa aattcagaaa ttattttgag acatttgata    360

atcgat                                                               366


<210>  62
<211>  560
<212>  DNA
<213>  Homo sapiens

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aaatatgact aatatggcat aatttatata ttgaataaag gcatctctat aaatacagat      120

attagtaaca atagaatgaa atgtgggagc caattttcac atgattacta aggtggattt      180

tatagccagc aaagaacaca attttaacaa gtgttgcttt catttcttta ctttggaggt      240

caagacattt ttatgacaga agaacagaag aaatactaca atgcaatgaa aaaactgggt      300

tcaaagaaac cacaaaaacc catacctcga cctgctgtaa gaataacata ttttcattgc      360

ctgttaaaac tatattacct aaccgtttca cagcccgaat ttctagaaac tagttatttt      420

tgtggatttg taacacaaag ttttttacct taacaatggg actagctagc ctaaatagct      480

tgaaaaatgt actttacata tataatatgt ataaattata taatgcataa catattttat      540

atgtaaacat ataaaataca                                                  560


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<213>  Homo sapiens

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aaagctacat tttttgttgc tttcttaaaa tcagaagaat tgaattcgat ttttttttaag      120

gtttctaatg gaacttttac atattatttg ttccagaaca aattccaagg aatggtcttt      180

gattttgtaa ccaaacaagt ctttgatatc agcatcatga tcctcatctg ccttaacatg      240

gtcaccatga tggtggaaac cgatgaccag agtcaagaaa tgacaaacat tctgtactgg      300

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tttaaaactt tagaggtgtt tttcactaat ctttctcatt catcccaaac tcccaaataa      540

aaatctaata gtccattgtt ttagtttttag tttgccattt ctctaattgc atgctgtgct      600

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<210>  64
<211>  3700
<212>  DNA
<213>  Homo sapiens

<400>  64
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actttcattt gctactatta agtataacaa tattttgtt atttgttgat tttctacagg      180

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ccgtcttgcc aggattggcc gaatcctacg tctgatcaaa ggagcaaagg ggatccgcac    300

gctgctcttt gctttgatga tgtcccttcc tgcgttgttt aacatcggcc tccttctttt    360

cctggtcatg ttcatctacg ccatctttgg gatgtccaat tttgcctatg ttaagaggga    420

agttgggatc gatgacatgt tcaactttga gacctttggc aacagcatga tctgcctgtt    480

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cccatctgtt gggattttct tttttgtcag ttacatcatc atatccttcc tggttgtggt    660

gaacatgtac atcgcggtca tcctggagaa cttcagtgtt gctactgaag aaagtgcaga    720

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gaagagttta cttcttgttt caggatgttt ttagattttt gaggtgctta aatagctatt    2040

cgtattttta aggtgtctca tccagaaaaa atttaatgtg cctgtaaatg ttccatagaa    2100

tcacaagcat taaagagttg ttttattttt acataaccca ttaaatgtac atgtatatat    2160

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tgaccaaaaa acatccccac caccacttta taaagttgat tctgctttat cctgcagtat    2400

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aagtctgctt tgtaaatagt aattttaccc agtggtgcat gtttgagcaa acaaaaatga    2520

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<213>  Homo sapiens

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ctctgtggtc aaaaaaaaaa aaaaaaaaaa aagctgaaca gctgcagagg aagacacgtt    180

ataccctaac catcttggat gctgggcttt gttatgctgt aattcataag gctctgtttt    240

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tcagcatgct tatcatgtgc actattttga ccaactgtgt atttatgacc ttgagcaacc   1080

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ttataaaaat cttggcaaga gggttttgct tagaagattt tacgtttctt cgtgatccat   1200

ggaactggct ggatttcagt gtcattgtga tggcatatgt gacagagttt gtggacctgg   1260
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tgggcaatct gaggaataaa tgtttgcagt ggccccaag cgattctgct tttgaaacca     1500

acaccacttc ctactttaat ggcacaatgg attcaaatgg gacatttgtt aatgtaacaa    1560

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aagtatatgt gtcaactgga cttcaagagg aggtccatgc caaactgact gttttaacaa    6600

atactcatag tcagtgccta tacaagacag tgaagtgacc tctctgtcac tgcaactctg    6660

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tacaccaaac acctttagta cagtccttgc atccattcta tttttaactt ccatatctgc    6840

catattttta caaaatttgt tctagtgcat ttccatggtc cccaattcat agtttattca    6900

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cctgtctctc aaatgatcag acaaaggtgt tttgccagag agataaaatt tttgctcaaa    7020

accagaaaaa gaattgtaat ggctacagtt tcagttactt ccattttcta gatggcttta    7080

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aattttattc taagtttcag agctctatat ttaatttagg tcaaatgctt tccaaaaagt    7260

aatctaataa atccattcta gaaaaatata tctaaagtat tgctttagaa tagttgttcc    7320
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tcttttgcaa gcttccaaca gggatgtatc ctgtatcatt cattaaacat agtttaaagg    7560

ctatcactaa tgcatgttaa tattgcctat gctgctctat tttactcaat ccattcttca    7620

caagtcttgg ttaaagaatg tcacatattg gtgatagaat gaattcaacc tgctctgtcc    7680

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accttttatt catagatgtt ttttttatt caacttttgt agtatttacg tatgcagact    8220

agtcttattt ttttaattcc tgctgcacta aagctattac aaatataaca tggactttgt    8280

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tctttcaata taattgatgc tatctcctaa ttacttggtg gctaataaat gttacattct    8880

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<213> Homo sapiens

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<223> Xaa = any amino acid

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
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Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
        35   40   45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
    50   55   60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65   70   75   80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
                85   90   95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
                100   105   110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
            115   120   125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
            130   135   140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145   150   155   160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
                165   170   175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
            180   185   190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp
        195   200   205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
    210   215   220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225   230   235   240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
            245   250   255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
        260   265   270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
    275   280   285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
    290   295   300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305   310   315   320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
            325   330   335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
            340   345   350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
        355   360   365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
    370   375   380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr

385   390   395   400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
                    405   410   415

Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
                    420   425   430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
                435   440   445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
        450   455   460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
465   470   475   480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
                    485   490   495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
                    500   505   510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
                515   520   525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
        530   535   540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545   550   555   560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
                565   570   575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
                580   585   590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
                595   600   605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
        610   615   620

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Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
625             630             635                 640


Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
                645             650                 655


Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
                660             665                 670


Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
            675             680             685


Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
    690             695             700


Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
705             710             715                 720


Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
                725             730                 735


Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
            740             745             750


Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
            755             760             765


Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
    770             775             780


Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
785             790             795                 800


Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
            805             810             815


Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
            820             825             830


Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
    835             840             845
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Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
    850             855             860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865             870             875             880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
            885             890             895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
            900             905             910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
        915             920             925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
    930             935             940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945             950             955             960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
            965             970             975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
        980             985             990

Gly Asn Lys Ile Asp Ser Cys Met  Ser Asn Asn Thr Gly  Ile Glu Ile
        995             1000            1005

Ser Lys  Glu Leu Asn Tyr Leu  Arg Asp Gly Asn Gly  Thr Thr Ser
    1010            1015            1020

Gly Val  Gly Thr Gly Ser Ser  Val Glu Lys Tyr Val  Ile Asp Glu
    1025            1030            1035

Asn Asp  Tyr Met Ser Phe Ile  Asn Asn Pro Ser Leu  Thr Val Thr
    1040            1045            1050

Val Pro  Ile Ala Val Gly Glu  Ser Asp Phe Glu Asn  Leu Asn Thr
    1055            1060            1065
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Glu Glu   Phe Ser Ser Glu Ser   Glu Leu Glu Glu Ser   Lys Glu Lys
    1070                1075                1080

Leu Asn   Ala Thr Ser Ser Ser   Glu Gly Ser Thr Val   Asp Val Val
    1085                1090                1095

Leu Pro   Arg Glu Gly Glu Gln   Ala Glu Thr Glu Pro   Glu Glu Asp
    1100                1105                1110

Leu Lys   Pro Glu Ala Cys Phe   Thr Glu Gly Cys Ile   Lys Lys Phe
    1115                1120                1125

Pro Phe   Cys Gln Val Ser Thr   Glu Glu Gly Lys Gly   Lys Ile Trp
    1130                1135                1140

Trp Asn   Leu Arg Lys Thr Cys   Tyr Ser Ile Val Glu   His Asn Trp
    1145                1150                1155

Phe Glu   Thr Phe Ile Val Phe   Met Ile Leu Leu Ser   Ser Gly Ala
    1160                1165                1170

Leu Ala   Phe Glu Asp Ile Tyr   Ile Glu Gln Arg Lys   Thr Ile Lys
    1175                1180                1185

Thr Met   Leu Glu Tyr Ala Asp   Lys Val Phe Thr Tyr   Ile Phe Ile
    1190                1195                1200

Leu Glu   Met Leu Leu Lys Trp   Val Ala Tyr Gly Phe   Gln Thr Tyr
    1205                1210                1215

Phe Thr   Asn Ala Trp Cys Trp   Leu Asp Phe Leu Ile   Val Asp Val
    1220                1225                1230

Ser Leu   Val Ser Leu Val Ala   Asn Ala Leu Gly Tyr   Ser Glu Leu
    1235                1240                1245

Gly Ala   Ile Lys Ser Leu Arg   Thr Leu Arg Ala Leu   Arg Pro Leu
    1250                1255                1260

Arg Ala   Leu Ser Arg Phe Glu   Gly Met Arg Val Val   Val Asn Ala
    1265                1270                1275

Leu Val   Gly Ala Ile Pro Ser   Ile Met Asn Val Leu   Leu Val Cys
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          1280                    1285                    1290


Leu Ile Phe Trp Leu Ile Phe  Ser Ile Met Gly Val  Asn Leu Phe
    1295                1300                1305


Ala Gly Lys Phe Tyr His Cys  Val Asn Met Thr Thr  Gly Asn Met
    1310                1315                1320


Phe Asp Ile Ser Asp Val Asn  Asn Leu Ser Asp Cys  Gln Ala Leu
    1325                1330                1335


Gly Lys Gln Ala Arg Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn
    1340                1345                1350


Val Gly Ala Gly Tyr Leu Ala  Leu Leu Gln Val Ala  Thr Phe Lys
    1355                1360                1365


Gly Trp Met Asp Ile Met Tyr  Ala Ala Val Asp Ser  Arg Asp Val
    1370                1375                1380


Lys Leu Gln Pro Val Tyr Glu  Glu Asn Leu Tyr Met  Tyr Leu Tyr
    1385                1390                1395


Phe Val Ile Phe Ile Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu
    1400                1405                1410


Phe Ile Gly Val Ile Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys
    1415                1420                1425


Phe Gly Gly Gln Asp Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr
    1430                1435                1440


Tyr Asn Ala Met Lys Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro
    1445                1450                1455


Ile Pro Arg Pro Ala Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe
    1460                1465                1470


Val Thr Arg Gln Val Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys
    1475                1480                1485


Leu Asn Met Val Thr Met Met  Val Glu Thr Asp Asp  Gln Gly Lys
    1490                1495                1500
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Tyr Met  Thr Leu Val Leu Ser  Arg Ile Asn Leu Val  Phe Ile Val
    1505                 1510                 1515


Leu Phe  Thr Gly Glu Phe Val  Leu Lys Leu Val Ser  Leu Arg His
    1520                 1525                 1530


Tyr Tyr  Phe Thr Ile Gly Trp  Asn Ile Phe Asp Phe  Val Val Val
    1535                 1540                 1545


Ile Leu  Ser Ile Val Gly Met  Phe Leu Ala Glu Met  Ile Glu Lys
    1550                 1555                 1560


Tyr Phe  Val Ser Pro Thr Leu  Phe Arg Val Ile Arg  Leu Ala Arg
    1565                 1570                 1575


Ile Gly  Arg Ile Leu Arg Leu  Ile Lys Gly Ala Lys  Gly Ile Arg
    1580                 1585                 1590


Thr Leu  Leu Phe Ala Leu Met  Met Ser Leu Pro Ala  Leu Phe Asn
    1595                 1600                 1605


Ile Gly  Leu Leu Leu Phe Leu  Val Met Phe Ile Tyr  Ala Ile Phe
    1610                 1615                 1620


Gly Met  Ser Asn Phe Ala Tyr  Val Lys Lys Glu Ala  Gly Ile Asp
    1625                 1630                 1635


Asp Met  Phe Asn Phe Glu Thr  Phe Gly Asn Ser Met  Ile Cys Leu
    1640                 1645                 1650


Phe Gln  Ile Thr Thr Ser Ala  Gly Trp Asp Gly Leu  Leu Ala Pro
    1655                 1660                 1665


Ile Leu  Asn Ser Ala Pro Pro  Asp Cys Asp Pro Asp  Thr Ile His
    1670                 1675                 1680


Pro Gly  Ser Ser Val Lys Gly  Asp Cys Gly Asn Pro  Ser Val Gly
    1685                 1690                 1695


Ile Phe  Phe Phe Val Ser Tyr  Ile Ile Ile Ser Phe  Leu Val Val
    1700                 1705                 1710
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Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
    1715   1720   1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met
    1730   1735   1740

Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala . Thr Gln Phe
    1745   1750   1755

Ile Glu Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro
    1760   1765   1770

Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met
    1775   1780   1785

Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile
    1790   1795   1800

Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
    1805   1810   1815

Asp Ala Leu Arg Ile Gln Met Glu Asp Arg Phe Met Ala Ser Asn
    1820   1825   1830

Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg
    1835   1840   1845

Lys Gln Glu Glu Val Ser Ala Ala Ile Ile Gln Arg Asn Phe Arg
    1850   1855   1860

Cys Tyr Leu Leu Lys Gln Arg Leu Lys Asn Ile Ser Ser Asn Tyr
    1865   1870   1875

Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp Leu Pro Ile Lys Gln
    1880   1885   1890

Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser Thr Pro Glu Lys
    1895   1900   1905

Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser Tyr Asp Ser
    1910   1915   1920

Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys Pro Glu
    1925   1930   1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
    1940   1945   1950

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<213> Homo sapiens

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
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Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
        35   40   45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
    50   55   60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65   70   75   80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
            85   90   95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
            100   105   110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
        115   120   125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
    130   135   140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145   150   155   160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
                165   170   175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
            180   185   190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
            195   200   205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
    210   215   220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225   230   235   240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
            245   250   255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
        260   265   270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
        275   280   285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
    290   295   300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305   310   315   320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
            325   330   335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
            340   345   350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
    355   360   365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
385   390   395   400

Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
                    405   410   415

Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
                    420   425   430

Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
                    435   440   445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
          450   455   460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
465   470   475   480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
                    485   490   495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
          500   505   510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
          515   520   525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
          530   535   540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
545   550   555   560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
                    565   570   575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
                    580   585   590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
          595   600   605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
    610   615   620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
625   630   635   640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
            645   650   655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
            660   665   670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
    675   680   685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
    690   695   700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
705   710   715   720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
            725   730   735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
            740   745   750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
    755   760   765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
    770   775   780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
785   790   795   800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
            805   810   815

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
            820   825   830

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Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
        835                 840                 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
    850                 855                 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865                 870                 875                 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
                885                 890                 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
                900                 905                 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
        915                 920                 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
    930                 935                 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945                 950                 955                 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
                965                 970                 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
            980                 985                 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
            995                 1000                1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
    1010                1015                1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
    1025                1030                1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
    1040                1045                1050
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Val Pro  Ile Ala Val Gly Glu  Ser Asp Phe Glu Asn  Leu Asn Thr
    1055                1060             1065

Glu Glu  Phe Ser Ser Glu Ser  Glu Leu Glu Glu Ser  Lys Glu Lys
    1070                1075             1080

Leu Asn  Ala Thr Ser Ser Ser  Glu Gly Ser Thr Val  Asp Val Val
    1085                1090             1095

Leu Pro  Arg Glu Gly Glu Gln  Ala Glu Thr Glu Pro  Glu Glu Asp
    1100                1105             1110

Leu Lys  Pro Glu Ala Cys Phe  Thr Glu Gly Cys Ile  Lys Lys Phe
    1115                1120             1125

Pro Phe  Cys Gln Val Ser Thr  Glu Glu Gly Lys Gly  Lys Ile Trp
    1130                1135             1140

Trp Asn  Leu Arg Lys Thr Cys  Tyr Ser Ile Val Glu  His Asn Trp
    1145                1150             1155

Phe Glu  Thr Phe Ile Val Phe  Met Ile Leu Leu Ser  Ser Gly Ala
    1160                1165             1170

Leu Ala  Phe Glu Asp Ile Tyr  Ile Glu Gln Arg Lys  Thr Ile Lys
    1175                1180             1185

Thr Met  Leu Glu Tyr Ala Asp  Lys Val Phe Thr Tyr  Ile Phe Ile
    1190                1195             1200

Leu Glu  Met Leu Leu Lys Trp  Val Ala Tyr Gly Phe  Gln Thr Tyr
    1205                1210             1215

Phe Thr  Asn Ala Trp Cys Trp  Leu Asp Phe Leu Ile  Val Asp Val
    1220                1225             1230

Ser Leu  Val Ser Leu Val Ala  Asn Ala Leu Gly Tyr  Ser Glu Leu
    1235                1240             1245

Gly Ala  Ile Lys Ser Leu Arg  Thr Leu Arg Ala Leu  Arg Pro Leu
    1250                1255             1260

Arg Ala  Leu Ser Arg Phe Glu  Gly Met Arg Val Val  Val Asn Ala
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                1265                        1270                        1275


Leu Val  Gly Ala Ile Pro Ser  Ile Met Asn Val Leu  Leu Val Cys
         1280                 1285                 1290


Leu Ile  Phe Trp Leu Ile Phe  Ser Ile Met Gly Val  Asn Leu Phe
         1295                 1300                 1305


Ala Gly  Lys Phe Tyr His Cys  Val Asn Met Thr Thr  Gly Asn Met
         1310                 1315                 1320


Phe Asp  Ile Ser Asp Val Asn  Asn Leu Ser Asp Cys  Gln Ala Leu
         1325                 1330                 1335


Gly Lys  Gln Ala Arg Trp Lys  Asn Val Lys Val Asn  Phe Asp Asn
         1340                 1345                 1350


Val Gly  Ala Gly Tyr Leu Ala  Leu Leu Gln Val Ala  Thr Phe Lys
         1355                 1360                 1365


Gly Trp  Met Asp Ile Met Tyr  Ala Ala Val Asp Ser  Arg Asp Val
         1370                 1375                 1380


Lys Leu  Gln Pro Val Tyr Glu  Glu Asn Leu Tyr Met  Tyr Leu Tyr
         1385                 1390                 1395


Phe Val  Ile Phe Ile Ile Phe  Gly Ser Phe Phe Thr  Leu Asn Leu
         1400                 1405                 1410


Phe Ile  Gly Val Ile Ile Asp  Asn Phe Asn Gln Gln  Lys Lys Lys
         1415                 1420                 1425


Phe Gly  Gly Gln Asp Ile Phe  Met Thr Glu Glu Gln  Lys Lys Tyr
         1430                 1435                 1440


Tyr Asn  Ala Met Lys Lys Leu  Gly Ser Lys Lys Pro  Gln Lys Pro
         1445                 1450                 1455


Ile Pro  Arg Pro Ala Asn Lys  Phe Gln Gly Met Val  Phe Asp Phe
         1460                 1465                 1470


Val Thr  Arg Gln Val Phe Asp  Ile Ser Ile Met Ile  Leu Ile Cys
         1475                 1480                 1485
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Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys
    1490   1495   1500

Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val
    1505   1510   1515

Leu Phe Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His
    1520   1525   1530

Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val
    1535   1540   1545

Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys
    1550   1555   1560

Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
    1565   1570   1575

Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg
    1580   1585   1590

Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn
    1595   1600   1605

Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe
    1610   1615   1620

Gly Met Ser Asn Phe Ala Tyr Val Lys Lys Glu Ala Gly Ile Asp
    1625   1630   1635

Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu
    1640   1645   1650

Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro
    1655   1660   1665

Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp Thr Ile His
    1670   1675   1680

Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser Val Gly
    1685   1690   1695

Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val Val
    1700   1705   1710

Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
    1715   1720   1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met
    1730   1735   1740

Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe
    1745   1750   1755

Ile Glu Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro
    1760   1765   1770

Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met
    1775   1780   1785

Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile
    1790   1795   1800

Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
    1805   1810   1815

Asp Ala Leu Arg Ile Gln Met Glu Asp Arg Phe Met Ala Ser Asn
    1820   1825   1830

Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg
    1835   1840   1845

Lys Gln Glu Glu Val Ser Ala Ala Ile Ile Gln Arg Asn Phe Arg
    1850   1855   1860

Cys Tyr Leu Leu Lys Gln Arg Leu Lys Asn Ile Ser Ser Asn Tyr
    1865   1870   1875

Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp Leu Pro Ile Lys Gln
    1880   1885   1890

Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser Thr Pro Glu Lys
    1895   1900   1905

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Thr Asp  Gly Ser Ser Ser Thr  Thr Ser Pro Pro Ser  Tyr Asp Ser
    1910                 1915             1920

Val Thr  Lys Pro Asp Lys Glu  Lys Phe Glu Lys Asp  Lys Pro Glu
    1925                 1930             1935

Lys Glu  Ser Lys Gly Lys Glu  Val Arg Glu Asn Gln  Lys
    1940                 1945             1950


<210>  69
<211>  1380
<212>  DNA
<213>  Homo sapiens

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gatatgaaag gtcagatgaa acaataacat acatctggat tgagaaatat cttaataact   120

gatggattat ttttattttc tttatgtatt gtgtgcttca atatcctaat aaataatatt   180

agctaggttc actgatgtat agaatctttt tctacattta gatatttctt gcaaatgttt   240

taccagaaag caacacaaaa atactatcag tgagtatgtg tttacactgt tctctaagga   300

gtcaaattcc tcaccttgaa aataattcat cccaggaaga gaaaaggttt tcaaaagact   360

agagcaggcc acaagggagc tttcgcaaaa ctctacacgt aaagggtaat gtaaacttaa   420

aacctatttt tcaaacagta atttatatat cttttaattt tagtagttta tgtgtgaaac   480

aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaga tgcaaataac   540

tgaatatgta aaaggtctca tacatattta tatgtagtag ataagttaca tttttttagt   600

gtgttgggaa attttagctc acatcacctc tctactgtca tcttggggca ctttcatgac   660

tacccatgct tcatgcaggt ttactttcct ccctgtgaca gaggataatg ggaatgtttt   720

ttctttggct caattttgtg tgtgtccgcc agtagatggc gtaccacttt gagtgcgatc   780

ggcctttttt tctttctttt ttttttttcct caaagctgtt ttctgatata tgttgggtac   840

catagagtga atctcagaac aggaagcgga ggcataagca gagaggattc tggaaaggtc   900

tctttgtttt cttatccaca gagaaagaaa gaaaaaaaat tgtaactaat ttgtaaacct   960

ctgtggtcaa aaaaaaaaaa aaaaaaaaaa gctgaacagc tgcagaggaa gacacgttat  1020

accctaacca tcttggatgc tgggctttgt tatgctgtaa ttcataaggc tctgttttat  1080

caggtaagct gacaaaacat ttcattatct gcaccataga acctagctac caggtcattt  1140

tccttacttt aaaatcatct tcatgctgct atttttaacc cagtgttgtt taaatgtaaa  1200
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ttacaggaac caaaggcatc gtttgatgtg taaactgctt actatttctt tatctttcaa   1260

agaaaataga gcctgtctgg aaatggtgat ttatggtaca tactaggcat caatggtctt   1320

gtgtttttgt agatgcttat gattaattgt attcagaaaa aatatttttt attatactta   1380

<210> 70
<211> 840
<212> DNA
<213> Homo sapiens

<400> 70
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aaggctgcca agaagggggg agcacccctg tcccaaccct aggatcctgg cagtggttcc   120

tggtcccatt cttcctaaat catgctaggg catgctttta acaagggtca aatatcttgc   180

tttgcatcat ccttgctttc tcgatccagg gccataaaaa aaaaaggaat aaaacccaga   240

cacagagcca gagcacccct atgccaaatg tcaaagatta taggctaatt tcacctgtat   300

tctctttcta cagagattat ggagcaagaa aactgaagcc aagccacatc aaggtttgac   360

agggatgaga tacctgtcaa ggattcatag tagagtggct tactgggaaa ggagcaaaga   420

atctcttcta gggatattgt aagaataaat gagataattc acagaaggga cctggagctt   480

ttccggaaaa aggtgctgtg actatctaag gtaactaaac aacttctggg tataagtttg   540

tttttgtgga aaataaacta aaatctctac tatttaacaa ggacagctgt atcaggacca   600

aaagaaggca gaggggtgtt ttcttccttc ctctaccagt ttgttcttcc aaagaggcaa   660

atacatacag ggagacatag cacagatgac cttagggaat ggaatgatgc caaaggctgt   720

tgatgtaaga aagagagatt aactcagttt ttttttttgtt tttgtttttt tgttgttgtt   780

gttgttgttt tgagacagag tctctctctg tcgcccaggc tggagtgcag tggcatgaac   840

<210> 71
<211> 780
<212> DNA
<213> Homo sapiens

<400> 71
gatatattaa attttatgta ttttaataaa ttataatgtg catataatca ttaataatat   60

atatattcca caccaaggca tcagtaagaa ttaattttta aagtctgctc taatgtgaat   120

ataaaattat gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa   180

aagtaaaaga gaactgcgaa agaactatga gggatttcca aacagcaaaa ttgtcattga   240

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agccatgaga aactctactc actaaattct ttaatttctc agcctaccca aatattgggc    300

aaaccctaat tctcttgcag gggaaaagct gagagtctgg aactagccta tcttccgagg    360

acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat    420

tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt    480

aaaaagtttt tcatgatttt gtgatggcac cttgttccat atcatctcag ataaatcaga    540

ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgttattt    600

ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt    660

agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga    720

ggctgagaca ggttagatga tacaggcata ccattagcag cagactcaat actaacccag    780


<210>   72
<211>   1025
<212>   DNA
<213>   Homo sapiens

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ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaaac    120

agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata    180

taatgtttat atattatata tactgtacat tgtagaatgg ctaaatcaaa ctaattaaca    240

ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat    300

gatgttttca agttcaaatg tgtagtgcag tactaaaagc atgacttaat gtttatagct    360

ttaaaaagtt actaaagaat gacattttgg ttgatgttct tatgcccaat cgcttgcttt    420

cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg    480

taattaaatg tgcaggatga aaagatggca caggcactgt tggtacccccc aggacctgaa    540

agcttccgcc tttttactag agaatctctt gctgctatcg aaaaacgtgc tgcagaagag    600

aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat    660

agtgacttgg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg    720

gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gagtattgat    780

tttagacttc taataaatct ttaatgaaac tcttaactgt aatatacttt tctgggcctt    840

atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt    900

atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttggttac    960
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agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatagt    1020

caaaa                                                                 1025


<210>  73
<211>  433
<212>  DNA
<213>  Homo sapiens

<400>  73
tgtaacyata tgttaattta aacatctaac atgtttgtag ttatgatata tcaactggtt      60

taaacaaacc agtttgaaca aacaaattcy atttttttaaa aaggtcctca tgtatgtaag     120

ctccttaaat aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt     180

ttatagtaat gaataaagga aaggcaattt cccgattcag tgccacctct gccttgtata     240

ttttaactcc actaaaccct gttaggaaaa ttgctabsaa gattttggta cattcatatc     300

cttttaatgt gaattgccta aatgctattt ctaacagttg attttaaaga aaatgtcagt     360

tatattttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt     420

catttatttg cat                                                        433


<210>  74
<211>  450
<212>  DNA
<213>  Homo sapiens

<400>  74
gagtgcacca aggccatatc acaggctttg aagtttctta ttattttatc attgtttttaa     60

aacaaataat attaatttca cagttttttgc atcgataaac tttttttgtgt gttttggatc    120

atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt     180

cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaaccc     240

tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac     300

actcaaattc tctagcaatc tccttgtggg tatagcctga cttatggttt ccacttctgt     360

ctaagaaaag ttattttcat aatatgcagc cggtaaggga ggtctttcgg gggagctatt     420

cttctacgag gtaagtattt tcccacaaaa                                      450


<210>  75
<211>  701
<212>  DNA
<213>  Homo sapiens

<400>  75
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aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt        60

caaactagat gattatccat aagatacatg aaactattat tctaaaccc aaatagttaa        120

accagattag attcctaaag aatatatttt ctcttcagtt taactctttg ctcaggcttg       180

taaaactaac taaatgaata gattatttgg taaatagaag taaggaacaa tattttaatg       240

aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tttaacagtt       300

caagcaaaat tgttaatttt ggcttggatg tttttcctag gtacacattc actggaatct       360

atacctttga gtcacttata aaaatcttgg caagagggtt ttgcttagaa gattttacgt       420

ttcttcgtga tccatggaac tggctggatt tcagtgtcat tgtgatggcg tgagtaactt       480

tgaaaatttg ataagcgcaa aggagtgaaa atagtcatag tacaaacaag gtctttgtgt       540

catatattaa atgtagagct ttcttgttag tcaagttaac tatatgggtt gtgtattttc       600

agaatacata ttagaataca tattgcaatg taaatatatc cagtaaatga tcaataaatg       660

gggttatctt catgtcatat agtctttctc ttcatcaaaa t                          701


<210>    76
<211>    286
<212>    DNA
<213>    Homo sapiens

<400>    76
atttgttaaa ctcacagggc tctatgtgcc aaacccagca ttaagtcctt atttagtata        60

aactttgcca aaactatcag taactctgat ttaattctgc aggtatgtaa cagaatttgt       120

aagcctaggc aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaactat       180

ttctgtaatc ccaggtaaga agaaactggt gtaaggtagt aggcccctta tatctccaac       240

ttttcttgtg tgttattgtg tttgtgtgtg aactccccta ttacag                     286


<210>    77
<211>    515
<212>    DNA
<213>    Homo sapiens

<400>    77
gtaagaagaa actggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt        60

attgtgtttg tgtgtgaact cccctattac agatatgtga cagagtttgt ggacctgggc       120

aatgtctcag cgttgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt       180

ccaggtgaga gctaggttaa acaccgaggt tgactttaat tattgagttt gaaatcaatt       240

tatatgactt acagcattag ccttgttgct tattattaca gttcatcccg gtaaataatg       300
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ccaaatgatg tttcaatgtc agtttagctc ctaaaatttt ataaattaca tgcgtattta      360

taaagtcagc ctttgagttt aacagaaaat tgcatgagac atcttcaaaa aatgctaatt      420

tgggcctctt gcgctctctc tctctctttt tcactaccat ggctttacta acagatttgg      480

attttaccat tcgctgcaga tgtagttcaa aaatg                                 515


<210>  78
<211>  564
<212>  DNA
<213>  Homo sapiens

<400>  78
aaacttcctg actagatatt taaaccttca tattgaattt ccagcaagca cactgttcat       60

gtgtaaaatc tgctgttcat ctatttccca aatcatcagg ctatccatac agctttggtg      120

tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc      180

atgatttctg gcactcttcc tcaggtaacc tatagttctc tctctgcagg tttaaagacc      240

attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg      300

ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat      360

aaatgtttgc agtggccccc aagcgattct gcttttgaaa ccaacaccac ttcctacttt      420

aatggcacaa tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg      480

aaggataaca ttggagatga cagtaagaag tattacatta tgttaacctt agtgttgctg      540

aatgaatttt caactataaa tagt                                            564


<210>  79
<211>  497
<212>  DNA
<213>  Homo sapiens

<400>  79
tgagactgtg ggtgtacagc cacctttgta ataactgaa atagtccaac tctgatttat        60

tactaatact aatgtgaata ggattaatat gaaataaaat gggttttttt ttgtattaac      120

aggtcacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atggttcaga      180

tgcagggtaa gaaacataat atatattttt aagatataga actctttgcg aaaaaaaaaa      240

gtaggtagga aaacaactac atggttatat gtgtagcctt accatgtatg caataaagag      300

cagtgctgct cccctaggaa gtgccttgtc tgccttaccg gattgccact ggtcctaaac      360

tcacagcaat taaaaattat ccctttgtga agacctttcc ccaaaatttc acagttaaga      420
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tgttcttaaa ttgatgctcc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta   480

tcagagctgt taggaaa   497

<210> 80
<211> 501
<212> DNA
<213> Homo sapiens

<400> 80
aaagagtaaa aatatggtaa ggtcagagcc aaaagtgtgt ggttgctagc tttctgccat   60

tctaaatgtc trwaaawatt tatttgcatc taaattttct atcggtcttc ctagtgaatt   120

tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat   180

aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa   240

ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga   300

aggatacatc tgtgtgaagg ctggtcgaaa ccccaactat ggctacacaa gctttgacac   360

ctttagctgg gctttcctgt ctctatttcg actcatgact caagactact gggaaaatct   420

ttaccagttg gtaaggtcca aatgagcatg cataacattt attttatag acatgtatga   480

aatgaaaagc ataggctgag t   501

<210> 81
<211> 432
<212> DNA
<213> Homo sapiens

<400> 81
agctaattag tctactgact atctaactgt ggtaatcaga tatttatttg gggacattat   60

actaaaatac tgatggaatt atcccccatt tccctagac attacgtgct gctgggaaaa   120

catacatgat attttttgtc ctggtcattt tcttgggctc attttatttg gtgaatttga   180

tcctggctgt ggtggccatg gcctatgagg ggcagaatca ggccaccttg gaagaagcag   240

aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag   300

ctcaggtact gagtgataaa mgcaaagatt tatcattatt attmttagtt tctaagtaga   360

aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt   420

gtcattagac ac   432

<210> 82
<211> 489
<212> DNA
<213> Homo sapiens

<400> 82
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agttgcggca gcatcagctg cttcaagaga tttcagtgga ataggtgggt taggagagct   120

gttggaaagt tcttcagaag catcaaagtt gagttccaaa agtgctaaag aatggaggaa   180

ccgaaggaag aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga   240

cagctttccc aaatccgaat ctgaagacag cgtcaaaaga agcagcttcc ttttctccat   300

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<213> Homo sapiens

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ataaatttga ttatccatgt ttaagggcaa gagtatacta actccaaaga aaacagatcc   180

tttaatatta atatttatta aataattgcg ttcttcccct acccccatcc cattcctttc   240

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caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa   360

tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact   420

gtttgtgccg cacagacatg gagagcgacg caacagtaac gttagtcagg ccagtatgtc   480

atccaggatg gtgccagggc ttccagcaaa tggggaagat gcacagcact gtggattgca   540

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<210> 84
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tgcaaagaaa tgctatgtgg tgttgtatta cttattggga agagtggttt gagccatcag   180

tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctctt   240

accagatttc aatggagatg ctggaggatt cctctggaag gcaaagagcc gtgagcatag   300

ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg   360

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<211> 748
<212> DNA
<213> Homo sapiens

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cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttgtt   180

aaataatgta aaatctacta gcaataataa ctcatttttg ttgttatta ctactcttcc   240

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ctttcctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta   660

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gtcttaccag ttgtaaacgt ctcaaaat   748

<210> 86
<211> 664
<212> DNA
<213> Homo sapiens

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aacctacaag tactttctaa aactgtgttt taagtttatg aagctttttt ggccttacag   600

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tact   664

<210> 87
<211> 750
<212> DNA
<213> Homo sapiens

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ccacgtgtgg ttctatgata ccacatacta ataaaataat gtctaaaatt atattatgat   180

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<211>   768
<212>   DNA
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aaaacttaaa tactgaagag ttcagcagtg agtcagaact agaagaaagc aaggaggtaa   660

ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttatttac   720

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<213>   Homo sapiens

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ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag   180

ttgatgttgt tctaccccga gaaggtgaac aagctgaaac tgaacccgaa gaagacctta   240

aaccggaagc ttgtttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc   300

cttgttctttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt   360

gtggtggctt atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga   420

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<210> 90
<211> 623
<212> DNA
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gagtgggggaa ggggcaagaa agtttatttt ttcctattta agattaaaat atattttta   180

attaactata tttsattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca   240

gaagaaggca aagggaagat ctggtggaat cttcgaaaaa cctgctacag tattgttgag   300

cacaactggt ttgagacttt cattgtgttc atgatccttc tcagtagtgg tgcattggta   360

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<211> 520
<212> DNA
<213> Homo sapiens

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ccatttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac   180

agcgaaagac tatcaaaacc atgctagaat atgctgacaa agtctttacc tatatattca   240

ttctggaaat gcttctcaaa tgggttgctt atggatttca aacatatttc actaatgcct   300

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tttttaaaag aggcaagttt gacatttcat atgtttctgt tattaaaact ttcactaata   420

atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc   480

tcatgggaaa gagtagagga ggtcctaaac atgggcagtg   520

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<400>   92
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attgacacgt gttgataaat atgggcaagt attctggttt cattggttaa aaaaaagcaa   180

tagtatgaga tgagactggc aatataagat gaccccacta tgtggaagat gaaagttgcc   240

aaggtatgtc caaattagta tttagtctgc attaaataga taccacaccc tataccttca   300

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acattaagag ctttaagacc tctaagagcc ttatcccggt ttgaaggcat gagggtaaga   480

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tcaaaaggtt tgtaagctat gttcccctcg ctgtctcttc taggtggttg tgaatgctct   300

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aacgggtaac atgtttgaca ttagtgatgt taacaatttg agtgactgtc aggctcttgg   480

caagcaagct cggtggaaaa acgtgaaagt aaactttgat aatgttggcg ctggctatct   540

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aaaaagttaa tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca       720

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tttcatctgg ttaaatgtca ttgttaggtg aaatttttat gaacaattca aatatatgtt       180

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atgtaagtat cactcaaata ttatttatag gttctagatt cttatggtg aatattggtg        300

gtaatttaaa cactgataca tccaaaattc tatattagaa catttaatat tgcatataaa       360

aaatgaacag tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata       420

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aagtagcact gtattaagta acagcactca ataaattact gatttagtgt aagtatttat       180

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<211> 637
<212> DNA
<213> Homo sapiens

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ggaaagacaa atattttttg tgaaagtact attggaacac agaattgtaa ccagttttat   240

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caccttttact tttgcacttt taattcaaca tgagtatcat atggtatctc tctagatttc   2640

aaggaaacac actggatact gcctactgac aaaacctatt cttcatattt tgctaaaaat   2700

atgtctaaaa cttgcgcaaa tataaataat gtaaaaatat aatcaacttt atttgtcagc   2760

attttgtaca taagaaaatt attttcaggt tgatgacatc acaatttatt ttactttatg   2820

cttttgcttt tgatttttaa tcacaattcc aaactttga atccataaga tttttcaatg   2880

gataatttcc taaaataaaa gttagataat gggtttatg gatttctttg ttataatata   2940
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ttttctacca ttccaatagg agatacattg gtcaaacact caaacctaga tcattttcta    3000

ccaactatgg ttgcctcaat ataacctttt attcatagat gttttttttt attcaacttt    3060

tgtagtattt acgtatgcag actagtctta ttttttttaat tcctgctgca ctaaagctat    3120

tacaaatata acatggactt tgttcttttt agccatgaac aaagtggcaa agttgtgcaa    3180

ttacctaaca tgatataaat ttttgttttt tgcacaaacc aaaagtttaa tgttaattct    3240

ttttacaaaa ctatttactg tagtgtattg aagaactgca tgcagggaat tgctattgct    3300

aaaaagaatg gtgagctacg tcattattga gccaaaagaa taaatttcat tttttattgc    3360

atttcactta ttggcctctg gggttttttg tttttgtttt ttgctgttgg cagtttaaaa    3420

tatatataat taataaaacc tgtgcttgat ctgacatttg tatacataaa agtttacatg    3480

aattttacaa cagactagtg catgattcac caagcagtac tacagaacaa aggcaaatga    3540

aaagcagctt tgtgcacttt tatgtgtgca aaggatcaag ttcacatgtt ccaactttca    3600

ggtttgataa taatagtagt aaccacctac aatagctttc aatttcaatt aactcccttg    3660

gctataagca tctaaactca tcttctttca atataattga tgctatctcc taattacttg    3720

gtggctaata aatgttacat tctttgttac ttaaatgcat tatataaact cctatgtata    3780

cataaggtat taatgatata gttattgaga atttatatta acttttttttt caagaaccct    3840

tggatttatg tgaggtcaaa accaaactct tattctcagt ggaaaactcc agttgtaatg    3900

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atataaggtg gctaa                                                     3975


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<220>
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<400>  99
tgtgttctgc cccagtgaga ct                                               22


<210>  100
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide
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cttcctgctc tgcccaaact gaat                                          24


<210>  101
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  101
ggcgatgtaa tgtaaggtgc tgtc                                          24


<210>  102
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  102
gtgccttcag ttgcaattgt tcag                                          24


<210>  103
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<220>
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<400>  103
ttaggaattt catatgcaga ataa                                          24


<210>  104
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<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  104
tgggccattt ttcgtcgtc                                                19


<210>  105
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<220>
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<400> 105
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<220>
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<400> 106
ctattggcat gtgttggtgc taca   24

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<212> DNA
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<220>
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<400> 107
gtgctggttt ctcatttaac tttac   25

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<400> 108
ttcccaactt aatttgatat ttagc   25

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<400> 109
gcagtttggg cttttcaatg ttag   24

<210> 110
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<400> 110
gacacagttt caraatcccr aatg   24

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<210> 112
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<400> 112
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<210> 113
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<400> 113
agcccatgca gtaatataaa tcct   24

<210> 114
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<212> DNA
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<400> 114
tccaggctga taagctatgt ctaa   24

<210> 115
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<212> DNA
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<400> 115
ctgtggcctg cctgagcgta tt   22

<210> 116
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<400> 116
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<400> 117
aaatacttgt gcctttgaa   19

<210> 118
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<400> 118
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<210> 119
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<400> 119
aggcagcaga acgacttgta ata   23

<210> 120
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<400> 120
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<210> 121
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<400> 121
gttgagcacc cttagtgaat aata   24

<210> 122
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<220>
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<400> 122
tcacacgctc tagactactt ctct   24

<210> 123
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<400> 123
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<210> 124
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<400> 124
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<210> 125
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<400> 125
gcagcaggca ggctctca   18

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<400> 126
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<210> 127
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<400> 127
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<210> 128
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<220>
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<400> 128
atccgggatg acctactgg   19

<210> 129
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<220>
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<400> 129
gataacgaga gccgtagaga ttcc   24

<210> 130
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<220>
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<400> 130
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<210> 131
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<220>
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<400> 131
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<210> 132
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<212> DNA
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<400> 132
tgcactattc ccaactcaca aa   22

<210> 133
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<400> 133
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<400> 134
gtgatggcca ggtcaacaaa   20

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<400> 135
ctgggactgt tctccatatt ggtt   24

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<400> 136
tttgcagggg ccaggaag   18

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<400> 137
cattgtggga aaatagcata agc   23

<210> 138
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<400> 138
gcaagaaccc tgaatgttag aaa   23

<210> 139
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taatgctttt aagaatcata caaa   24

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<400> 141
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<220>
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atgtgccatg ctggtgtatt tc   22

<210> 143
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<210> 144
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<400> 144
cagcaatttg gagattattc att   23

<210> 145
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<220>
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<400> 145
gcagccactg atgatgataa   20

<210> 146
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<400> 146
ctgccagttc ctataccact t   21

<210> 147
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<220>
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<400> 147
tacagcagaa attgggaaag at   22

<210> 148
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<212> DNA
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<400> 148
gtattcatac ctacccacac ctat   24

<210> 149
<211> 23
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<220>
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<400> 149
ttcttggcag gcaacttatt acc   23

<210> 150
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<400> 150
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<400> 151
ggctgaatgt ttccacaact   20

<210> 152
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<400> 152
gttcaactat tcggaaacac g   21

<210> 153
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<400> 153
aggcagagga aaacaatgg   19

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<220>
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<400> 154
acaaggtggg ataattaaaa atg   23

<210> 155
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<220>
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<400> 155
gtttctctgc cctcctattc c   21

<210> 156
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<400> 156
aagctacctt gaacagagac a   21

<210> 157
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<400> 157
aatgatgatt ctgtttatta   20

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<220>
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<400> 158
aatttgccat tccttttg   18

<210> 159
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<400> 159
ttgacatcga agacgtgaat aatc   24

<210> 160
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<400> 161
ccctttgaaa attatatcag taa   23

<210> 162
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<212> DNA
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<400> 162
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<220>
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<400> 163
tccagcacta aaatgtatgg taat   24

<210> 164
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<212> DNA
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<210> 165
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<220>
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ttttagccat ccattttcta tttt   24

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<400> 166
tattttcccc catatcattt ga   22

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<212> DNA
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<220>
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<400> 167
tttgcaagaa actagaaagt c   21

<210> 168
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<220>
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ttgatgcgtg acaaaatgg   19

<210> 169
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<220>
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gaccagagtg aatatgtgac tacc   24

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<212> DNA
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<400> 170
ctgggatgat cttgaatcta atc   23

<210> 171
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<400> 171
gcaactcagt tcatggaatt tgaa   24

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<211>  23
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<220>
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<400>  172
cttgttttcg ttttaaagta gta                                          23


<210>  173
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<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  173
caaagatcac cctggaagct cagtt                                        25


<210>  174
<211>  25
<212>  DNA
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  174
ttcaagcgca gctgcaaact gagat                                        25


<210>  175
<211>  23
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  175
acatcggcct cctactcttc cta                                          23


<210>  176
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<212>  DNA
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide
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<400> 176
acagatgggt tcccacagtc c   21

<210> 177
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<220>
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<400> 177
taacgcatga tttcttcact ggtt   24

<210> 178
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<212> DNA
<213> Artificial Sequence

<220>
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<400> 178
atcccaaaga tggcgtagat ga   22

<210> 179
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<220>
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<400> 179
tgagaaatag gctaaggacc tcta   24

<210> 180
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<400> 180
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<400>  181
aaggggtgca aacctgtgat ttt                                    23


<210>  182
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<400>  182
agggccatgt ggttgccata c                                      21


<210>  183
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<220>
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<400>  183
cttccggttt atgttttcat ttct                                   24


<210>  184
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<212>  DNA
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<400>  184
tctttattag ttttgcacat ttta                                   24


<210>  185
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<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  185
caatccttcc aaggtctcct atc                                    23


<210>  186
<211>  24
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide

<400> 186
tttcatcttt gccttcttgc tcat   24

<210> 187
<211> 22
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<220>
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<400> 187
catgtccact gcagcttgtc ca   22

<210> 188
<211> 24
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<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide

<400> 188
tcccctttac acagagtcac agtt   24

<210> 189
<211> 15
<212> DNA
<213> Homo sapiens

<400> 189
gcatttgaag atata   15

<210> 190
<211> 15
<212> DNA
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<400> 190
gcatttgacg atata   15

<210> 191
<211> 15
<212> DNA
<213> Homo sapiens

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<400>  191
atcatatcct tcctg                                                    15
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<210>  192
<211>  15
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<213>  Homo sapiens
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<400>  192
atcatatmct tcctg                                                    15
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<210>  193
<211>  24
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<213>  Artificial Sequence
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide
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<400>  193
atgggttgaa tgactttctg acat                                          24
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<210>  194
<211>  24
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<213>  Artificial Sequence
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<223>  Description of Artificial Sequence: synthetic oligonucleotide
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<400>  194
aggcatttcc tgtacaggga ctac                                          24
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```
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<211>  24
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide
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<400>  195
acaggaaatg cctcttctta cttc                                          24
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<400>  196
tttccccaag gattctacta ctgt                                                    24


<210>  197
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<220>
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<400>  197
agtgcatgta actgacacaa tcac                                                    24


<210>  198
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<220>
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<400>  198
cttgcgttcc tgtttgggtc tct                                                     23


<210>  199
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<220>
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<400>  199
tccgcttctt taccagggaa tc                                                      22


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<220>
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<400>  200
aggcagtgaa ggcaacttga ctaa                                                    24


<210>  201
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<213>  Artificial Sequence
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<220>
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<400> 201
cagggcaata tttataaata atgg   24

<210> 202
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<220>
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<400> 202
tttggaaaat gtgtagctca ataa   24

<210> 203
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<220>
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<400> 203
aaggcatggt agtgcataaa ag   22

<210> 204
<211> 22
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<220>
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<400> 204
atgaaacata aagggaggtc aa   22

<210> 205
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<220>
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<400> 205
aatgtgagct tggctattgt ctct   24

<210> 206
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<212> DNA
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<400> 208
caacaaggct tctgcacaaa ag   22

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<210>  212
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<400>  212
ctgagacatt gcccaggtcc                                                    20


<210>  213
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<400>  213
tttttacccg ttgctttctt ta                                                 22


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<400> 218
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<400> 219
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<210> 227
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<400> 228
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gcaaaggaca ttggctctga gaat                                        24


<210>  232
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<400>  232
ctgcctgcac cagtcacaac tct                                         23


<210>  233
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<400>  233
tgggctttgc tgctttcaa                                              19


<210>  234
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<210> 235
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<400> 235
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<210> 236
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<220>
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<400> 236
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<210> 237
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<400> 237
tttgatttgg gactgttgta aac                                               23


<210> 238
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<400> 238
aaggcaatta taaactcttt caag                                              24


<210> 239
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<400>  239
tgggagttaa attaagttgc tcaa                                              24


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<400>  240
acattttatg aacactccca gtta                                             24


<210>  241
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<220>
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<400>  241
attaacactg ttcttgcttt tat                                              23


<210>  242
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<220>
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<400>  242
gtgccagcgt gggagttc                                                    18


<210>  243
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<400>  243
gtggggggctc taggaaacct                                                  20


<210>  244
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<220>
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<400>  244
tttaatgaaa atgaggaaaa tgtt                                          24


<210>  245
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<220>
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<400>  245
gaccaagcat ttttatttca ttc                                           23


<210>  246
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<220>
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<400>  246
agtggcagca agattgtca                                                19


<210>  247
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<220>
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<400>  247
ggccttgctt ttgagttcc                                                19


<210>  248
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<400>  248
ggtctttgcc tatttctatg gtg                                           23
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<220>
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<400>  249
ttaaaccgct tgaagatcta aata                                          24


<210>  250
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<400>  250
tatacaccaa aatatctcct tat                                           23


<210>  251
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<400>  251
ggggcacacc taattaattt ttat                                          24


<210>  252
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<220>
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<400>  252
aaagaggata ctcaagacca cata                                          24


<210>  253
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cccaccaaca caaatatacc taat                                          24


<210>  254
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<220>
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<400>  254
tgaagggaaa gggaaaagat tt                                            22


<210>  255
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<220>
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<400>  255
tccagcctta ggcacctgat aa                                            22


<210>  256
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<220>
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<400>  256
ataaagcagc aaagtgcagc atac                                          24


<210>  257
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<220>
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<400>  257
aaggctgaac tgtgtagaca tttt                                          24


<210>  258
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<220>
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<400> 258
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<210> 259
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<400> 259
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<210> 260
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<400> 260
ccacctggca gtttgattg   19

<210> 261
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<220>
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<400> 261
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<400> 262
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<210> 263
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<220>
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<400> 263
caaaacattg ccccaaaag   19

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<400> 264
tcaaactaaa caatttccct ctaa   24

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<400> 265
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<400> 266
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<210> 267
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<400> 267
attttatagc cagcaaagaa cac   23

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<400>  268
ctagaaattc gggctgtgaa                                              20


<210>  269
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<220>
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<400>  269
ctgctttgtg acctaaggca agtt                                         24


<210>  270
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<400>  270
gtgaccatgt taaggcagat gagg                                         24


<210>  271
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<220>
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<400>  271
ggaatggtct ttgattttgt aacc                                         24


<210>  272
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<220>
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<400>  272
tccttaactg aataaaagca cctc                                              24


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tggaacaccc atcaaagaag atact                                            25


<210>  274
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<400>  274
gtgggagtcc tgttgacaca aac                                               23


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<400>  275
agcgattcat ggcatcaaac                                                   20


<210>  276
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<400>  276
acgtggtgga aggcgtcata                                                   20


<210>  277
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<400> 277
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<210> 278
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<400> 278
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<400> 279
caaagatcac cctggaagct cagtt   25

<210> 280
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<210> 281
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<210> 282
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<210> 284
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<220>
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<400> 284
tttatacaaa ggcagacaac at   22

<210> 285
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<220>
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<400> 285
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<210> 286
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<220>
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<400> 286
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<400> 287
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<210> 288
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<220>
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<400> 288
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<210> 289
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<220>
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<400> 289
taatgtgcct gtaaatgttc cataga   26

<210> 290
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<212> DNA
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<220>
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<400> 290
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<210> 291
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<212> DNA
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<220>
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<400> 291
gtcccagcag catgactatc   20

<210> 292
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<220>
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<400> 292
cccactgggt aaaattacta ac   22

<210> 293
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<400> 293
tagccatctt ctgctcttgg t   21

<210> 294
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<220>
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<400> 294
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<210> 295
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<400> 295
tcttgcctat gctgctgtat ctta   24

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<400>  296
agtcgggctt ttcatcattg ag                                              22


<210>  297
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<400>  297
ttcttcatgt cattaagcaa tagg                                            24


<210>  298
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<400>  298
ttcaatttaa aagtgctagg aaca                                            24


<210>  299
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<400> 301
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<210> 302
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<400> 302
tcctgcatgc atttcaccaa c   21

<210> 303
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<220>
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<400> 303
ctgttcacat tttgtaaaac taat   24

<210> 304
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<220>
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<400> 304
atcccaaaga tggcgtagat ga   22

<210> 305
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<220>
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<400> 305
cacgctgctc tttgctttga   20

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<220>
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<400>   306
gatctttgtc agggtcacag tct                                              23


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<400>   307
tacaaagaa                                                              9


<210>   308
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<400>   308
tacagagaa                                                              9


<210>   309
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<400>   309
tacagagaa                                                              9


<210>   310
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<220>
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<400>   310
tgtgtccgcc agtagatgg                                                   19


<210>   311
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<210> 312
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<400> 312
gaagcggagg cataagcaga   20

<210> 313
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<400> 313
ggtgcagata atgaaatgtt ttgt   24

<210> 314
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<210> 315
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<400> 315
caaaaacaaa cttataccca gaag   24

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<220>
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<400> 316
caaatattgg gcaaaccta at   22

<210> 317
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<220>
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<400> 317
aaggtgccat cacaaaatca t   21

<210> 318
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<220>
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<400> 318
atcgcttgct ttcctaactc ttgt   24

<210> 319
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<220>
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<400> 319
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<210> 320
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<212> DNA
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<220>
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<400> 320
agaagcccaa aaaggaacaa gata   24

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<210>  321
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<220>
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<400>  321
ggcccagaaa agtatattac agtt                                              24


<210>  322
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<220>
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<400>  322
tccttaaata agcccatgtc taat                                              24


<210>  323
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<212>  DNA
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<220>
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<400>  323
tctcaaagaa attttacaga tact                                              24


<210>  324
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<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  324
aatggccatg gtaacctact aaca                                              24


<210>  325
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<220>
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<400>  325
caggctatac ccacaaggag att                                              23

<210>  326
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<400>  326
tgttaatttt ggcttggatg tt                                               22

<210>  327
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<220>
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<400>  327
tcactccttt gcgcttatca a                                                21

<210>  328
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<220>
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<400>  328
agggctctat gtgccaaacc                                                  20

<210>  329
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<220>
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<400>  329
aggggcctac taccttacac cag                                              23

<210>  330
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<220>
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<400> 330
tgtaatccca ggtaagaaga aac   23

<210> 331
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<220>
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<400> 331
taccgggatg aactgtaata ataa   24

<210> 332
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<400> 332
ttctggcact cttcctcagg taac   24

<210> 333
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<400> 333
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<210> 334
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<400> 334
ggcccccaag cgattctg   18

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<220>
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<400> 335
tgtacaccca cagtctcaac tatt   24

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<400> 336
acagccacct ttgtaaataa   20

<210> 337
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<220>
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<400> 337
tttttcgcaa agagttctat   20

<210> 338
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<220>
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<400> 338
aaactgaccc tacctccatt tctc   24

<210> 339
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<212> DNA
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<400> 339
actcagccta tgcttttcat ttca   24

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<400>  340
cagatattta tttggggaca ttat                                              24


<210>  341
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<220>
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<400>  341
aaatctttgc ktttatcact cagt                                             24


<210>  342
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<220>
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<400>  342
tagtgcctgg ctttgtttta tgac                                             24


<210>  343
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<220>
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<400>  343
cggatttggg aaagctgtct ct                                               22


<210>  344
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<220>
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<400> 344
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<210> 345
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<220>
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<400> 345
tccctcaact gaagtacaga tagt   24

<210> 346
<211> 23
<212> DNA
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<220>
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<400> 346
ataattgcgt tcttcccta ccc   23

<210> 347
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<212> DNA
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<220>
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<400> 347
aagccctggc accatcctg   19

<210> 348
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<212> DNA
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<220>
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<400> 348
tttgcaaaga aatgctatgt   20

<210> 349
<211> 22
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<220>
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<400> 349
ctgggtaaca gacttcagta at   22

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<220>
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<400> 350
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<400> 351
gatggcaaga tcaacaaatg ga   22

<210> 352
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<220>
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<400> 352
cttgatctgg gactgctgtg atg   23

<210> 353
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<212> DNA
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<220>
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<400> 353
aggatataat ttttggttca aca   23

<210> 354
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<212> DNA
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<220>
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<400> 354
ttttcagtgc tcttgatagt agtg   24

<210> 355
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<220>
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<400> 355
gtgccaatga gcgacagg   18

<210> 356
<211> 22
<212> DNA
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<220>
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<400> 356
ccacgtgtgg ttctatgata cc   22

<210> 357
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<212> DNA
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<220>
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<400> 357
accgtgggag cgtacagtca   20

<210> 358
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<220>
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<400> 358
cggcatgcag ctctttggta   20

<210> 359
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<212> DNA
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<220>
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<400> 359
tggccacgtt cctagctact gtc   23

<210> 360
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<212> DNA
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<220>
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<400> 360
gagttccctt tttaggctgt tatt   24

<210> 361
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<212> DNA
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<400> 361
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<210> 362
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<212> DNA
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<220>
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<400> 362
tgaaaaataa gatgcgggag tg   22

<210> 363
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic oligonucleotide

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gtgaggctgg ggttgtttat g                                            21


<210>  364
<211>  21
<212>  DNA
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<220>
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<400>  364
gagatgggaa tggaaccacc a                                            21


<210>  365
<211>  23
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  365
ttcgataatg catataagca caa                                          23


<210>  366
<211>  21
<212>  DNA
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  366
aaggggggaaa atcacatctt t                                           21


<210>  367
<211>  24
<212>  DNA
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<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  367
ttaaatgagg catattcagt ctcc                                         24


<210>  368
<211>  19
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<220>
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<400> 368
ggaagtggag tggggaagg   19

<210> 369
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<220>
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<400> 369
attcttgcca atatgcattt cact   24

<210> 370
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<220>
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<400> 370
ttcttttgta ctcactatta tactaa   26

<210> 371
<211> 24
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<400> 371
aaacttgcct cttttaaaaa caat   24

<210> 372
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<212> DNA
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<400> 372
taccacaccc tataccttca gtca   24

<210> 373
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<212> DNA
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<400> 373
gagtatggca ccctttttcta tcta   24

<210> 374
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<212> DNA
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<220>
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<400> 374
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<210> 375
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<212> DNA
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<220>
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<400> 375
tgcttgccaa gagcctgac   19

<210> 376
<211> 22
<212> DNA
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<220>
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<400> 376
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<210> 377
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<220>
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<400> 377
caaacgaaga acatcaggga aata   24

<210> 378
<211> 24
<212> DNA
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<220>
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<400> 378
ttcacaatat tgtacaaaaa gtta   24

<210> 379
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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attaccacca atattcacca taag   24

<210> 380
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<212> DNA
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<220>
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<400> 380
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<210> 381
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<212> DNA
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<220>
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<400> 381
gaaccccaga atgaagaaag gtaa   24

<210> 382
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<212> DNA
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<220>
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<400> 382
tttgtgaaag tactattgga acac   24

<210> 383
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<212> DNA
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<220>
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<400> 383
acgcatggct ttggaacat   19

<210> 384
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<220>
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<400> 384
cccgtatgtg gaagggcttt at   22

<210> 385
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<400> 385
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<210> 386
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<220>
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<400> 386
aacggatgac cagggcaaat ac   22

<210> 387
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<212> DNA
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<220>
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<400> 387
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<210> 388
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<212> DNA
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<220>
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<400> 388
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<210> 389
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<212> DNA
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<220>
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<400> 389
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<210> 390
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<212> DNA
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<220>
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<400> 390
cacgctgctc tttgctttga   20

<210> 391
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<212> DNA
<213> Artificial Sequence

<220>
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<400> 391
tgagctgcca gggtgaattg   20

<210> 392
<211> 26

<212> DNA
<213> Artificial Sequence

<220>
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<400> 392
ttgctagcac ctattcttaa tagtgc   26

<210> 393
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<212> DNA
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<220>
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<400> 393
ccagggcagc tgcaaaatca gag   23

<210> 394
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
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<400> 394
cccgatgcga cccagttta   19

<210> 395
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<220>
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<400> 395
tggaggggtt tgatgccata   20

<210> 396
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<212> DNA
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<220>
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<400> 396
gatggatgcc cttcgaatac aga   23

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<212>  DNA
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<220>
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<400>  397
ttcccattta gtttgtcaat aatc                                          24


<210>  398
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<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: synthetic oligonucleotide

<400>  398
aaggggagga ttgacttacc tat                                           23


<210>  399
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<220>
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<400>  399
ttggcatgga cctcctcttg a                                             21


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<400>  400
tggtataagg tag                                                      13


<210>  401
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<400>  401
caagataatg atgatgag                                                 18


<210>  402
<211>  15
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<400>   402
caagatgatg atgag                                                      15


<210>   403
<211>   13
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<400>   403
tggtgtaagg tag                                                        13


<210>   404
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<213>   Homo sapiens

<400>   404
ccccttatat ctccaac                                                    17


<210>   405
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<212>   DNA
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<400>   405
cccctattay ctccaac                                                    17


<210>   406
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<400>   406
aaatacgtaa tcgat                                                      15


<210>   407
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<400>   407
aaatacataa tcgat                                                      15


<210>   408
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<213>   Homo sapiens
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aaatacrtaa tcgat   15